

# East Houston Sector Study



# East Houston Sector Study

City of Houston  
Planning and Development Department  
Planning Services Division

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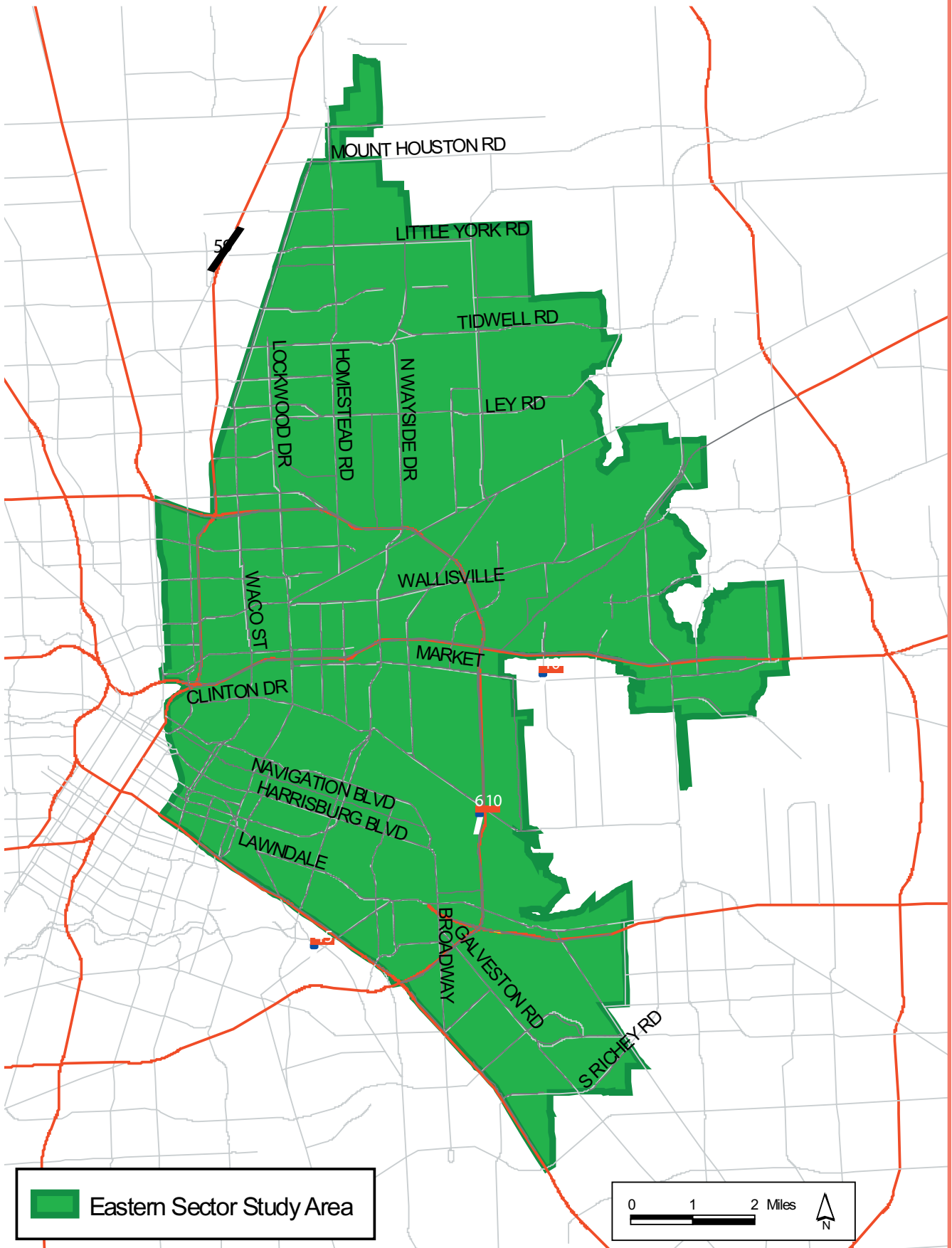
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# EXECUTIVE SUMMARY

Map 1: Eastern Sector Study Area



Source: COHGIS

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## Executive Summary

According to the US Census of 2000, the eastern sector of the City faces a range of challenges from inadequate infrastructure to deteriorating housing and quality of life. Investing in the area would benefit the City as a whole. Additional investment in infrastructure and low-income housing in the Eastern Sector of Houston would yield much needed tax revenues and improve the quality of life for the residents of the area.

### Overview

The eastern sector covers 71.3 square miles or 45,603 acres of land (11.3 percent of the City of Houston). Industrial land covers 17 percent, and vacant and undeveloped land is higher at 32 percent. Between 1990 and 2000, the area experienced a dramatic increase in Hispanic population (66.9 percent) and a 41.5 percent decrease in White population.

The Eastern Sector has 12 parcels of undeveloped land with more than 100 acres. The area north of I-10 has a rural feel with large tracts of undeveloped and underdeveloped land amid primarily single-family residential land uses. The area to the south provides a more balanced land use mix with bigger tracts of undeveloped and underdeveloped land primarily mixed industrial or commercial uses.

The Eastern Sector is also largely known for its high concentration of industrial land along the Houston Ship Channel.

### Population

According to the 2000 Census, the total population of the Eastern Sector was 273,412, approximately 14% of the City's total. Also, population in the Eastern Sector grew 4% between 1990 and 2000 compared to a citywide growth rate of nearly 20%. The greater share of this population is concentrated in East Little York/Homestead (22,140), Northshore (27,350), Greater Fifth Ward (22,211), and Magnolia Park (21,302). Population density in the area north of the Bayou is 2.2 persons per acre. South of the Bayou the population density is 6.8 persons per acre.

The Eastern Sector experienced significant shifts in Hispanic and White populations between 1990 and 2000. The Hispanic population increased 66.9% in the area north of the Bayou (East Little York/Homestead, Trinity Gardens, East Houston, Settegast, Kashmere, El Dorado, Hunterwood, Greater Fifth Ward, Denver Harbor, Pleasantville and Northshore). Conversely, the White population decreased 41.5%. Settegast had the greatest population loss of all the Super Neighborhoods in the area.

Hispanic population also increased significantly in the area south of the Buffalo Bayou (Denver Harbor, Clinton Park, Second Ward, Eastwood, Harrisburg, Pecan Park, Park Place, Meadowbrook, Magnolia and Lawndale). White and Black populations decreased in these areas. Lawndale/Eastwood experienced the largest population increase (6.8%) while Clinton Park/Fidelity experienced the largest population decrease (19.4%) since 1990.

A majority of the population 25 years and older have no high school diploma. In addition, the 2000 Census records show that the Eastern Sector has the lowest percentage of persons with college degrees compared to the rest of the city.

### Development Issues

Major issues affecting the stability and development potential for the Eastern Sector include: 1) deterioration of neighborhoods and coexistence of heavy industries, 2) an unattractive and rural image, 3) drainage and flooding problem, 4) petrochemical waste issues, and 5) an aging or inadequate infrastructure and rail safety.

#### *1. Deterioration of neighborhoods and coexistence with heavy industries*

The coexistence of heavy industries and neighborhoods creates a safety problem and hampers development. Industries create jobs to sustain the area's economy but at the same time they create pollution. To spur development and improve industrial safety, the City needs to create transition areas between residential and industrial land uses by encouraging areas of appropriate mixed uses such as commercial/office and industrial/commercial.

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## *2. Unattractive and Rural Image*

Most of the Eastern Sector especially to the north and along the City limits exhibits a rural and unattractive image. The area has numerous pockets of developable land infill. The City could improve the image by encouraging affordable housing in the proposed development mix. This effort could also be achieved through a land-banking program the City recently implemented and through a program that would offer incentives to neighborhood industries to relocate to industrial parks with freeway access.

## *3. Drainage and Flooding Problem*

The Buffalo Bayou, the Greens Bayou, and several other small bayous drain into the Eastern Sector. These drainage corridors provide an excellent opportunity to develop parks that would enhance the quality of life within the Eastern Sector community and the City at large. Although the Buffalo Bayou Plan already addresses some park and drainage issues, the introduction of similar plans along the other bayous would provide added aesthetics that attract development and improve the quality of life.

## *4. Environmental issues*

The Eastern Sector has the highest concentration of petrochemical industries in the entire city. While these industries create jobs to sustain the area economy, the pollutants they emit are a health hazard and may conflict with the current federal Clean Air Act. The Houston Metropolitan Statistical Area falls under the Environmental Protection Agency clean air non-attainment area. Although occasional accidental plant fires have often been contained with little or no life lost, the environment still poses a health and safety concern. The City and industries in the area work with the Texas Commission on Environmental Quality to meet State and EPA requirements for Clean Air.

The area also has two inactive landfills and significant amount of industrial sludge and brownfields. These are developable lands that can be cleaned and converted into economic use. The City should promote conversion of inactive landfills to golf courses. Areas with golf courses serve as a magnet for high value development and enhancement to the community's quality of life.

## *5. Evidence of Aging or inadequate Infrastructure to Meet Growth, Mobility and Safety Needs*

Rail, road and water infrastructure crisscross the Eastern Sector. Some of this infrastructure is outdated and would not meet future growth needs of the area. Some rail crossings need effective signaling or grade-separation to improve safety. Some thoroughfares need to be designated as truck routes to reduce fast deterioration of local roads and impact on the community. Major thoroughfares such as Clinton Drive, Liberty Road, Harrisburg, Wayside, Navigation, Lyons Street, 610 Loop, I-10 W., US 90, Maxey Road and Market Street are used heavily by truck traffic to and from the port. Such a designation would improve general mobility, traffic safety and minimize traffic gridlock.

The area has a number of positive attributes that provide a significant opportunity for economic development; however, without a long-range strategy to guide economic development over the next 10 to 20 years, the opportunity to affect change may be lost. A comprehensive, long-range strategy for addressing future growth and development as well as for addressing existing environmental and other problems, which are creating or exacerbating blight and deterioration, is needed. Such a strategy must consider regional and local priorities.

## **Growth and Development Potential**

To better illustrate the growth potential in Eastern Houston, population, employment and cost/revenue projections were developed for two micro-areas, Harrisburg to the south and Wayside to the north for a 25-year period. The selected micro-areas have unique and varied characteristics that could spur future development potential. Development potentials in Wayside are associated with large parcels of vacant land while those along Harrisburg are associated with numerous parcels of infill land.

Population and employment growth in the Harrisburg micro-area is projected at 3% each year. This projection assumes an aggressive growth rate due to intervention in infrastructure and related investment by the City. The projection increase corresponds to 6,911 single-family units and 7,223 multi-family residential units for the 25-year projection period.

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Wayside population and employment is projected to increase by 2.5%. The increase assumes an aggressive intervention in infrastructure and similar investments by the City during the projection period. This projection would yield 3,428 single-family units, 170 multi-family units and 4,453 jobs in the projection period.

## Strategies

Given the scarcity of funds, the City would need to involve private and volunteer organizations to stimulate investment in the area. Innovative financial mechanisms such as TIRZ would also need to be employed with traditional resources to cover projected investment costs.

Critical to successfully stimulating new development in this area is collaboration among the stakeholders. Similar to the Main Street Coalition, the City could foster the creation of a coalition of private property owners, non-profit organizations, residents and relevant governmental agencies. Such a coalition would:

1. Take the lead in developing a unified, long-range vision/plan for the area that sets priorities and outlines a set of strategies and actions to achieve the desired vision. Capitalizing on the area's opportunities and assets, the plan would identify opportunities for strategically leveraging public investment that would attract private investment and development.
2. Market the plan, promoting opportunities to potential developers and marshal the support of the local community.
3. Ensure continued coordination among investors and stakeholders and play a strong role in influencing the pattern of private sector development in the sector by representing the interests and concerns of the major stakeholders.

A vital antecedent to forming such a coalition would be an open dialogue with vested stakeholders such as major landowners, investors and developers about the needs and future of this area. In addition, a review of proposed investment by local

governmental agencies, such as the Harris County Flood Control District's project on Sims Bayou, TXDOT infrastructure and the City of Houston CIP commitments, is essential to avoid duplication of efforts and ensure that investment is targeted to priority areas identified in the plan.

Financing needed infrastructure improvements to attract new development will require investigating other financing tools such as Special Districts, Enterprise Zones and Tax Increment Reinvestment Zones and developing a set of incentives. Special districts have recently been introduced in the study area to pay for part of the infrastructure costs of new development.

Finally, an Infrastructure Master Plan that addresses roads and utility needs and anticipates future development/redevelopment, with a timeline for committing to undertake infrastructure improvements, will provide a positive direction to encourage investment in the area. Currently, development in the area is difficult due to the lack of infrastructure and the inability of investors to bear the cost of infrastructure improvements needed to make development feasible. Such a plan will ensure timely investment and make the area more attractive to development.

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# PART I: STUDY AREA OVERVIEW



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## PART I: STUDY AREA OVERVIEW

Sector Studies examine existing conditions, issues and development opportunities in areas of the city with large quantities of undeveloped land. The purpose of focusing on these areas is to create a framework for discussion of:

- 1) The development potential of particular areas within the city;
- 2) Citywide and regional priorities relative to needs and opportunities in the area, mainly as they relate to infrastructure, mobility and environmental problems as well as redevelopment; and
- 3) Coordination of regional and city functional plans relative to capital programming in order to leverage public and private investments and affect future development.

Identifying issues and potential for development in selected areas of Houston helps public policies take shape. They may serve as an instrument for coordinating local CIP decisions and leveraging investments made by the city, other agencies and private and nonprofit organizations. By helping to define areas of intervention, sector planning can be an effective tool for:

- Increasing the tax base by attracting population to underdeveloped areas or areas ripe for of the city that otherwise would settle in jurisdictions outside the city limits;
- Increasing densities in underdeveloped areas, therefore decreasing the cost of providing infrastructure;
- Encouraging jobs and training centers; and
- Promoting easy access to jobs, thereby reducing automobile miles traveled and cutting pollution levels.

An important part of this planning process will be the establishment of a coalition of stakeholders made up of both the public and private sectors, including residents, property owners and the business community. This coalition would be charged with

developing revitalization strategies, identifying priorities, and leading implementation efforts. Targeted infrastructure investments by the City of Houston could act as a catalyst for implementation by attracting development that otherwise might locate elsewhere in the city or county. Supplemented by economic incentives and funding for brownfields remediation, these investments could lead to greater density in southern Houston, reducing the need for residents to travel great distances for jobs, services, and recreation, and expanding the city's tax base.

### Approach

In spite of unprecedented growth in Houston's suburbs including Fort Bend and Brazoria Counties, over 17,800 acres within the city's eastern boundaries remain largely undeveloped and more acreage is ripe for redevelopment. To determine the development/redevelopment potential for this area, the Planning and Development Department conducted a detailed analysis of Houston's southern areas. The analysis consisted of an assessment of existing conditions, development potential and opportunities and the benefit that investment in the study area might realize for the city as a whole.

The Eastern Houston Sector Study consists of several parts:

- Part I presents an overview of the major elements of the study;
- Part II provides a detailed snapshot of current conditions in Eastern Houston by examining existing conditions, future trends and issues. It proposes a set of recommendations for establishing an attractive climate for development in the study area, and for preserving viable existing, residential and commercial uses; and
- Part III examines the potential for development/redevelopment in two selected 'micro-areas', the increase in city tax revenues that might result from such development, and the cost of implementing infrastructure improvements that could encourage new development.

The population and employment projections, tax revenue projections, and infrastructure costs presented in the third part are general and merely

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a starting point for further discussion and analysis. Detailed information on Eastern Houston Sector, the methodology and data on the final cost/revenue analysis are provided in the Appendices.

## The Study Area Boundaries and Methodology

The study area is bound on the south by I-45 south; on the west by US 59; on the north and east by the Houston City limits. The area is heavily industrialized especially around the Port of Houston where a high concentration of petrochemical industries is located. The study area also includes several historic communities such as Second Ward, Fifth Ward, Harrisburg and Pleasantville.

The major thoroughfares serving the study area include I-45 south of Downtown, 610 Loop east, SH 225, I-10 east, US 90, US 59 north, Broadway Boulevard, Harrisburg, Clinton Drive, Lockwood, Homestead Road, Ley Road, Market Street and Wayside.

The Eastern Houston Sector existing conditions and trends analysis were conducted over several months by collecting and examining land use, demographic, economic, infrastructure, environmental, and community data. Geographic Information System (GIS) was used to analyze and map land use data. Data sources included Census 2000, Harris County Appraisal District data, Houston-Galveston Area Council population and employment projections and current City and community plans.

### Key Characteristics

The eastern sector covers 71.3 square miles or 45,603 acres of land (11.3 percent of the City of Houston). Industrial land covers 17 percent, and vacant and undeveloped land is a little higher at 32 percent. Between 1990 and 2000, the area experienced a dramatic increase in Hispanic population (66.9 percent) and a 41.5 percent decrease in White population.

The Eastern Sector has 12 parcels of undeveloped land with more than 100 acres. The section of the Eastern Sector north of I-10 has a rural feel with large tracts of undeveloped and underdeveloped land

amid primarily single-family residential land uses. The area to the south provides a more balanced land use mix with bigger tracks of undeveloped and underdeveloped land primarily along industrial or commercial uses.

The Eastern Sector is also largely known for its high concentration of industrial land along the Houston Ship Channel.

### Issues

Major issues affecting the stability and development potentials for the Eastern Sector include the following: 1) deterioration of neighborhoods and coexistence of heavy industries, 2) evidence of unattractive and rural image, 3) drainage and flooding problems, 4) environmental issues, and 5) evidence of aging or inadequate infrastructure and rail safety.

#### *1. Deterioration of neighborhoods and coexistence with heavy industries*

The coexistence of heavy industries and neighborhoods creates a safety problem and hampers development. Industries create jobs to sustain the area's economy but at the same time they create pollution. To spur development and improve industrial safety, the City needs to create transition areas between residential and industrial land uses by encouraging areas of appropriate mixed uses such as commercial/office and industrial/commercial.

#### *2. Evidence of Unattractive and Rural Image*

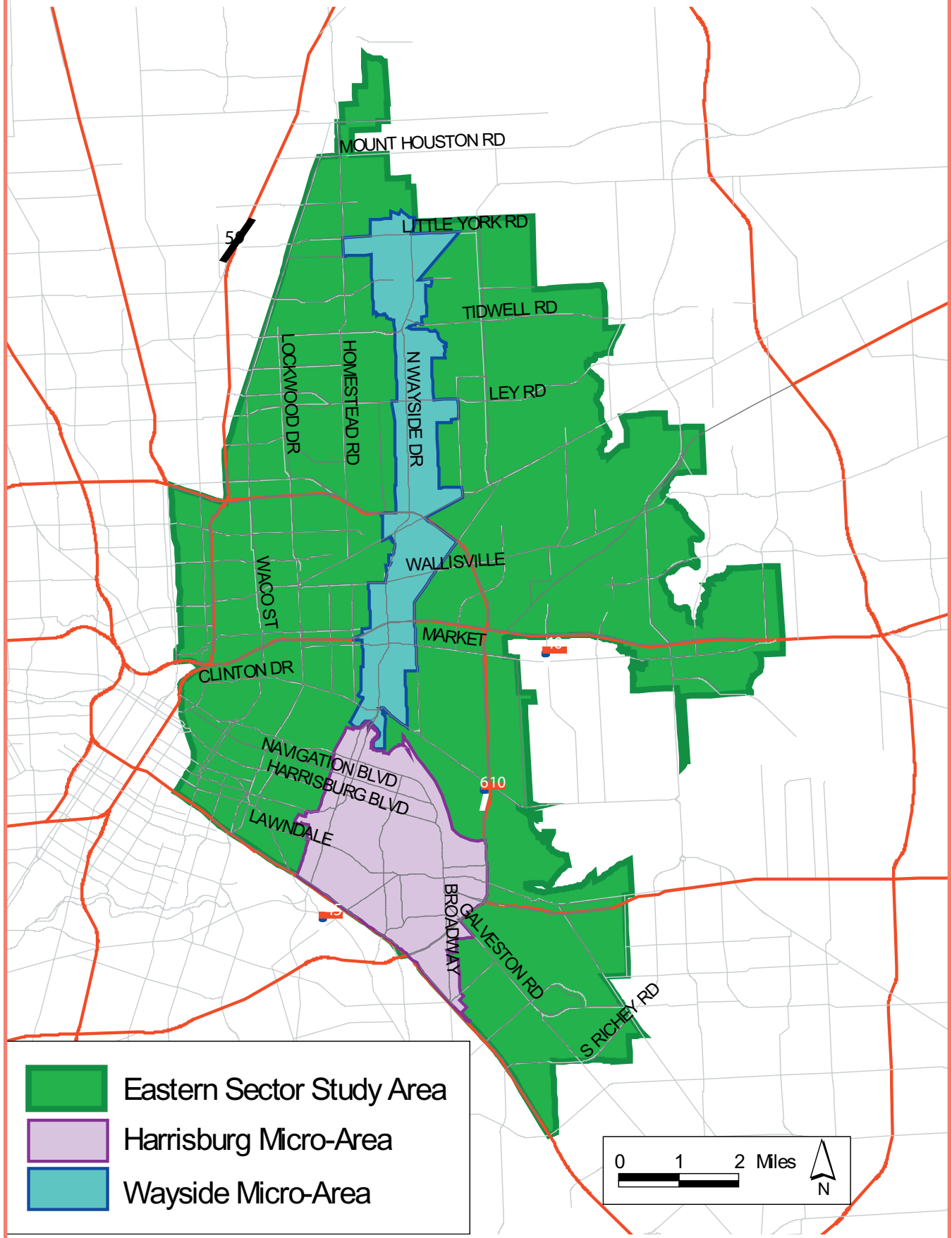
Most of the Eastern Sector especially to the north and along the city limits is rural and poor.

The area has numerous pockets of developable land infill. The City could improve the image by encouraging affordable housing in the proposed development mix. This effort could also be achieved through the Land Assemblage Redevelopment Authority (LARA) program the City recently implemented and through a program that would offer incentives to neighborhood industries to relocate to industrial parks with freeway access.

#### *3. Drainage and Flooding Problem*

The Buffalo Bayou, the Greens Bayou, and several other small bayous drain the Eastern Sector. These drainage corridors provide an excellent opportunity to develop parks that would enhance the quality of life within the Eastern Sector community and

Map 2: Eastern Sector Study and Micro-Areas



Source: COHGIS

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the City at large. Although the Buffalo Bayou Plan already addresses some park and drainage issues, the introduction of similar plans along the other bayous would provide added aesthetics that attract development and improve the quality of life.

#### *4. Environmental issues*

The Eastern Sector has the highest concentration of petrochemical industries in the entire city. While these industries create jobs to sustain the area economy. Their existence may pose a safety concern for the area.

The area also has two inactive landfills and significant amount of industrial sludge and brownfields. These are developable lands that can be cleaned and converted into economic use. The City should promote conversion of inactive landfills to golf courses. Areas with golf courses serve as magnet for high value development and enhancement to the community quality of life.

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Several rail, road and water infrastructure crisscross the Eastern Sector. Some of this infrastructure is outdated and would not meet future growth needs of the area. Some rail crossings need effective signaling or grade-separation to improve safety. Some thoroughfares need to be designated as truck routes to reduce fast deterioration of local roads and impact on the community. Major Thoroughfares such as Clinton Drive, Liberty Road, Harrisburg, Wayside, Navigation, Lyons Street, 610 Loop, I-10 W., US 90, Maxey Road and Market Street are used heavily by truck traffic to and from the port. Such a designation would improve general mobility, traffic safety and minimize traffic gridlock.

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## **Growth and Development Potential – Cost/Revenue Analysis**

To better illustrate the growth potential in Eastern Houston, population, employment and cost/revenue projections were developed for two micro-areas, Harrisburg to the south and Wayside to the north for a 25-year period. The selected micro-areas have unique and varied characteristics that could spur future development potentials. Development potentials in Wayside are associated with large parcels of vacant land while those along Harrisburg are associated with numerous parcels of land infill.

## **Approach and Methodology**

Scenario 1 in both micro-areas study assumes population and employment growth will be moderate or continue according to predicted studies by the Houston-Galveston Area Council (H-GAC). H-GAC estimates used were developed using Traffic Analysis Zones (TAZ). Because the TAZs do not correspond with the micro-area boundaries, an average of TAZs that are substantially represented in the micro-area was used to determine the growth rates. The outcome growth rate was converted into a yearly rate for population and employment.

Scenario 2 assumes that a substantial intervention will occur to alter development patterns in the micro-areas. The calculations also assume a constant growth applied yearly over the 25-year period. The method for calculating growth rates in each micro-area is different and outlined in a separate section of this report.

The following steps were taken to project population and employment growth, tax revenues and infrastructure costs for each scenario (see Appendix B for greater detail).

1. Quantification of “developable land” in each micro-area, which is defined for this analysis as vacant land. Land development will not necessarily continue in the same proportion of uses as currently exists. For example, in the Harrisburg Micro-Area, the transportation and utilities grid are largely complete and therefore future development is not anticipated to show a significant increase.



2. Estimation of maximum buildout by calculating potential building square footage on available land at prevailing densities, then converting that building square footage to population and employment.
3. Estimation of potential increment of dwelling units and non-residential building square footage in each micro-area over a 25-year time period. For Scenario 1, estimates were based on 2020 TAZ population and employment projections, which were then converted into units and building square footage using current land-use distribution. For Scenario 2, projections were based on population and employment estimates derived from a higher rate of growth. Higher growth rates were determined by comparing micro-area growth with county growth, and by considering regional growth share. These figures were then converted into units and building square footage using an assumed land-use distribution scenario as described in the appendix.
4. Calculation of tax revenues for the City of Houston resulting from new development for Scenarios 1 and 2. Tax revenues included property, sales, and hotel tax. This was conducted only for Scenario 2.
5. Calculation of the cost for the city to provide the needed infrastructure to fill the gaps of existing water, wastewater and storm water facilities and road networks in the growth areas.

Using the approach described above, the following projections were made:

- Growth potential of the two micro-areas based on 1) past trends, 2) strong public and private intervention, and 3) the comparison of the two scenarios;
- Tax revenue that would accrue from new development in the two scenarios; and
- General infrastructure investment costs for Scenario 2, comprised of cost to implement roads, water, and wastewater lines beyond what are already being implemented or planned.

## Findings

### 1. Population Growth

The Wayside Micro-Area shows a population increase of 22% for moderate growth and 79% for

aggressive growth by 2025. Our projections also show an aggressive growth of 74% in the Harrisburg Micro-Area for the same period. For details on the methodology for these calculations and estimates, see Appendix B.

### 2. Employment Growth

The Harrisburg Micro-Area will show growth of 33% and a significant increase of 41% by 2025. Although Wayside shows a moderate growth of 59%, the aggressive growth only shows a slight growth of 63% by 2025.

### 3. Fiscal Impact

Potential cumulative tax revenues for Scenario 2 of Wayside Micro-Area will yield over 94 million dollars. This would amount to a gain of over 25 million dollars. Cumulative tax revenues for Scenario 2 of Harrisburg Micro-Area will yield over 11 million dollars more than with moderate growth. The degree of difference between the two scenarios results from multiple factors including land use. Details are illustrated in Appendix C, Revenue Analysis.

### 4. Costs

Infrastructure costs for each micro-area vary according to percent built out status of existing infrastructure. The most significant infrastructure cost will involve the widening of Little York from US 59 to Wayside. Infrastructure costs associated with the Harrisburg Micro-Area will involve primarily upgrading water and wastewater needs. Cost estimates for each area were based on estimates from the City of Houston, Department of Public Works and Engineering.

## Conclusions and Recommendations

Setting citywide and regional priorities is an essential strategy for achieving growth in the area. The CIP could be an important tool for establishing these priorities and for implementing planning actions that will change the development climate in this area. Integrating an area-wide plan based on community consensus with capital improvement programming could greatly benefit the process of setting priorities, coordinating capital investments and leveraging existing investments for greater impact. In addition,

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several regional and citywide plans, including the Major Thoroughfare and Freeway Plan, the Harris County Flood Control District watershed plans, Harris-Galveston Coastal Subsidence District Plan, Metro's South Corridor Study and long and short term State transportation plans could be used to determine priorities and coordinate plans and actions.

The broad area-wide plan would be a framework for decision-making that would include a set of recommendations for its implementation. These recommendations would address issues of development/redevelopment, accessibility and infrastructure, environmental constraints, neighborhood conservation and improvement and commercial corridor development. Achieving public consensus on goals and objectives for development will be an essential component of the planning process.

Opportunities for new development or redevelopment in the Eastern Sector already exist. The following actions can build on these opportunities.

- Create transition areas between residential and industrial land uses by encouraging areas of appropriate mixed uses such as commercial/office and industrial/commercial.
- Encourage mixed development (residential/commercial) along Harrisburg. Such development along this corridor would provide the appropriate/desired development mix needed to implement The Buffalo Bayou Plan and the Metro Solutions Plan.
- Include affordable housing in the proposed development mix. The area has numerous pockets of developable land available for infill. This effort could be achieved through the Land Assembly Redevelopment Authority recently created by the City and through a program that would offer incentives to neighborhood industries to relocate to industrial parks with freeway access.
- Encourage residential development on large parcels of undeveloped land northeast of Tidwell and West Little York.
- Create parks along the Bayous. Buffalo Bayou, Greens Bayou, and several other small bayous drain the Eastern Sector. These drainage corridors provide an excellent opportunity to develop parks that would enhance the quality of life within the Eastern Sector community and the City at large. Although the Buffalo Bayou Plan already addresses some park and drainage issues, the introduction of similar plans along the other bayous would provide added aesthetics that attract development and improve the quality of life.
- Promote commercial retail development along North Wayside where it intersects with Mount Houston, Little York, Tidwell and Crosstimbers.
- Develop a commercial corridor along Broadway north of I-45 to simulate the Hobby Airport Enhancement Plan proposed along Broadway south of I-45 and the Hobby Airport vicinity. Creating such a corridor would improve north-south mobility and attract new development.
- Encourage industrial development along Liberty Road. Liberty Road runs along the Union Pacific rail line and still has extensive tracts of land available for industrial development. Although there is industrial development along this corridor, growth has been very slow. TIRZ and/or other incentives can be used to attract investment.
- Promote conversion of inactive landfills to golf courses or other recreational uses. The Eastern Sector has two inactive landfills and has a potential for additional inactive landfills in the future. Areas with golf courses serve as magnet for high value development and enhancement to the community quality of life.



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- Use urban design elements to create a visibly nautical theme along the Ship Channel. The significance of the Houston Ship Channel and the Port of Houston to the study area and the City cannot be overemphasized. Creating a nautical theme would help the community to recognize and appreciate the importance of the Port in the area.
  - Promote creation of small industrial parks with freeway access to encourage small neighborhood industries to relocate to areas more compatible with their use. Some of the Eastern Sector's major transportation corridors such as US 90, Liberty Road and I-10 W, have access to the freeways and can still absorb several industrial parks. Should the small industrial parks scattered over the area relocate along major transportation corridors, they would provide additional land for housing or commercial development.
  - Explore the possibility of using legal instruments available such as TIRZ, EZ and NEZ to encourage industrial development along strategic corridors such as Little York Road, North Wayside and US 90 Highway and protect adjacent residential areas from commercial and industrial encroachment. Creating such incentives would provide investment leverage to potential developers.
  - Encourage light industrial development southeast of Broadway and south of SH 225.
  - Create dedicated trucking routes to minimize negative impacts of trucking on neighborhoods. Designated routes would be improved to handle large and heavy vehicles. Major Thoroughfares such as Clinton Drive, Liberty Road, Harrisburg, Wayside, Navigation, Lyons Street, 610 Loop, I-10 W., US 90, Maxey Road and Market Street are used heavily by truck traffic to and from the port. Such a designation would improve general mobility, traffic safety and help to channel the limited road infrastructure funds where they are most needed.
  - Enhance roadways, underpasses and pedestrian walkways. Implement a streetscape improvement program similar to the \$2.7 million project funded largely by the Texas Department of Transportation in the entire Eastern Sector. Similar programs can be developed through Super-neighborhood Councils working in coordination with the City, County and State Department of Transportation.
  - Coordinate existing security measures with industry to improve and protect the infrastructure surrounding the Port. In 2003 The Port of Houston Authority received \$1.8 million from Congressional Appropriations for Port security. It also received an additional \$4.37 million from the Office of Domestic Preparedness. The Port is seeking another \$13 million for a cohesive security program that will include surveillance and protection of the infrastructure. Extending port security to the surrounding neighborhoods would improve the quality of life and enhance development.
  - Improve accessibility along key corridors and consider grade separation at major rail intersections. Building rail grade separations at major road intersections would improve mobility and minimize traffic gridlock.
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## PART II: EXISTING CONDITIONS

## PART II: EXISTING CONDITIONS

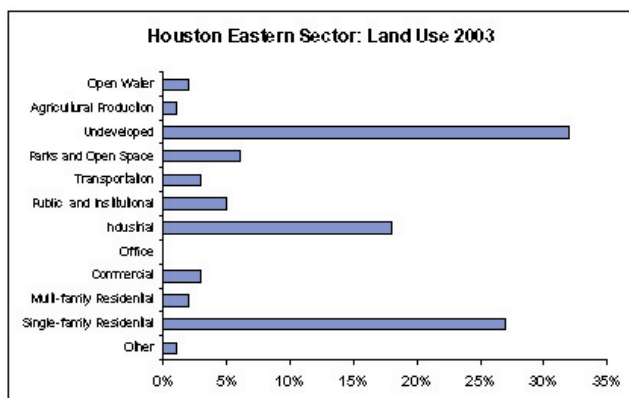
This chapter explores the potential for future development of the Eastern Sector of Houston through an assessment of existing conditions, needs and trends, and creates a framework for discussion of land use alternatives. This analysis is just the first step in the sector planning process.

### Land Use and Development

Although the Eastern Sector has a slightly higher proportion of vacant and undeveloped land (32 percent) than the City as a whole (28 percent), the Sector is largely known for its high concentration of industrial uses (17% of total land area), particularly along the Houston Ship Channel. This is nearly two times the proportion of industrial land in the City as a whole. The northern part of the study area has a rural feel. At 29 percent, the proportion of residential land here is lower than in the city as a whole. Figure 1 below illustrates land use distribution among the various categories in the Eastern Sector and Figure 2 illustrates land use distribution for the entire City.

Between 1992 and 2003, the City issued 5,476 permits for new construction in the Eastern Sector. Thirty-seven percent of these were for residential uses, 28 percent were for public and institutional uses, 14 percent for industrial uses and 10 percent for commercial uses. During this period, the average value for the major land uses ranged from \$68,350 for single-family, \$724,033 for multi-family, \$1,167,942 for commercial/office, \$766,606 for

**Figure 1. Houston Eastern Sector Land Use, 2003**



Source: COGIS

industrial and \$2,387,018 for institutional. Figure 3 shows the distribution of permits by value for the different uses during the period.

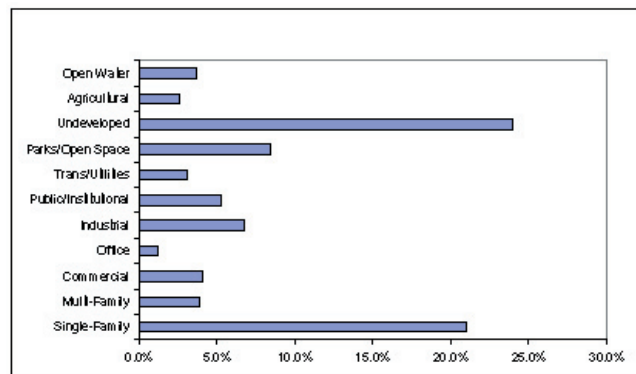
### Undeveloped and Vacant Land

The proportion of undeveloped and vacant land (32 percent) in the Eastern Sector is slightly higher than in the City as a whole (28 percent). Most of the undeveloped parcels are residential infill lots located in neighborhoods. Twelve parcels are more than 100 acres each and are classified as agricultural, exempt and general commercial vacant land and are generally located toward the eastern city limits.

### Residential Uses

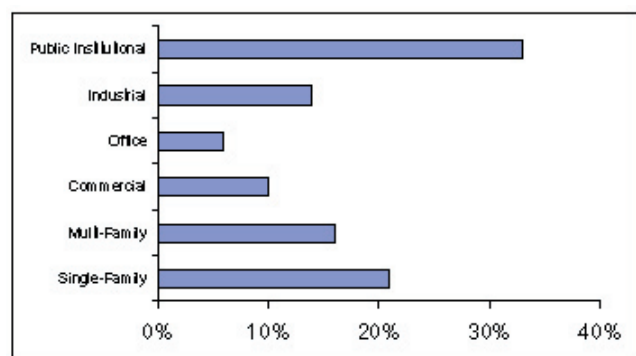
Residential uses account for 29 percent of the land and about half of this acreage is located north of Liberty Road. South of Liberty Road, residential uses are intermingled with primarily industrial uses.

**Figure 2. Land Use City of Houston - 2003**



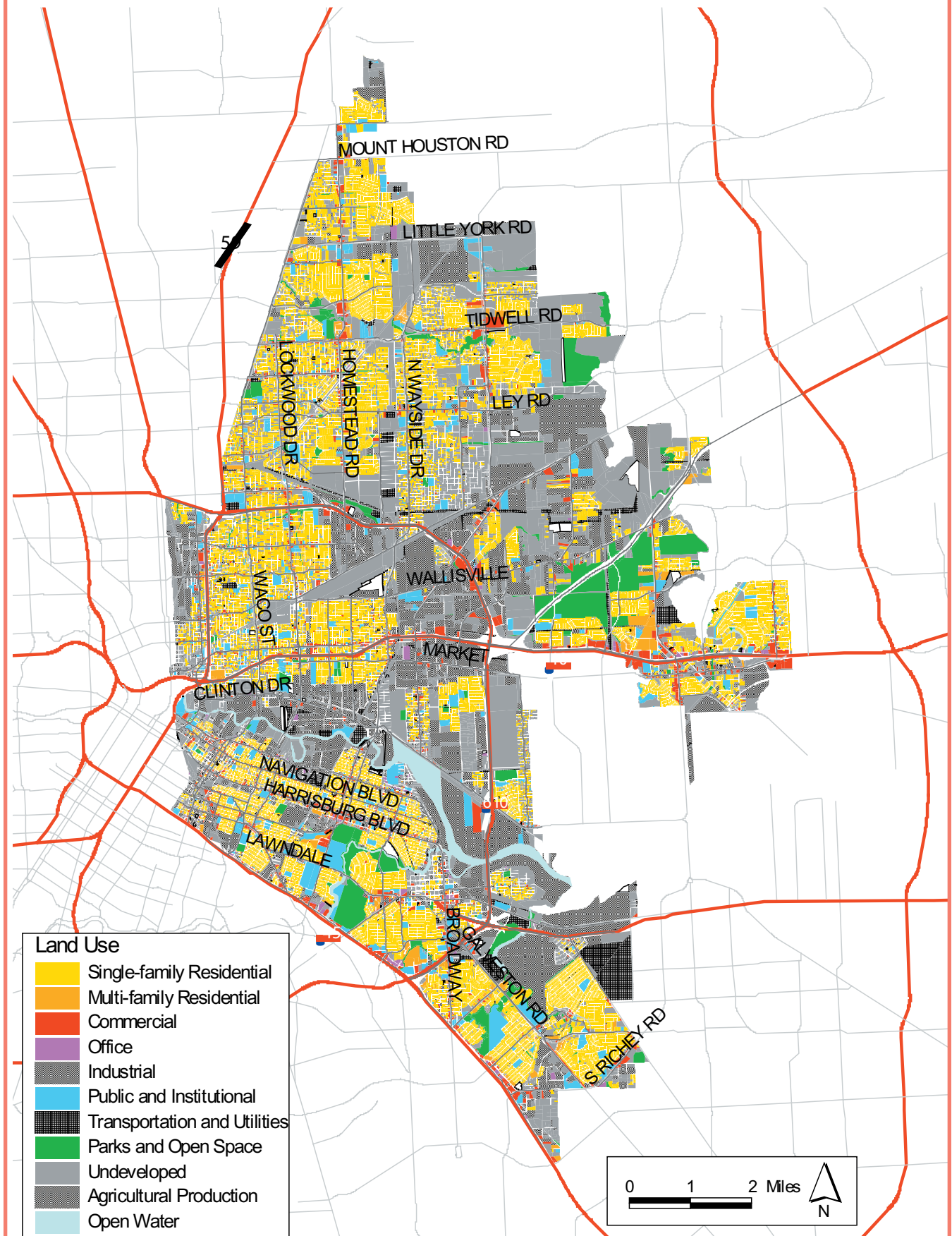
Source: COGIS

**Figure 3. Eastern Sector: New Building Space Permitted, 1999 - 2003**



Source: City of Houston Building Permits

**Map 3: Eastern Sector Study Area Land Use**



Source: COHGIS

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Single-family residential uses comprise 27 percent of the Study area, while in the City of Houston the equivalent figure is 25 percent. Multi-family residential uses comprise only 2 percent of the Study area compared to more than 5 percent citywide.

In general, small multi-family buildings are scattered in single-family areas, with concentrations at the eastern part of the sector north of Highway 10 and Maxey Rd.

### **Residential Trends**

Between 1992 and 2003, some 3,200 residential building permits were issued in the Study area; 1,300 single family and 1,900 multi-family units. Although new single-family residential development was scattered throughout the area, it tended to concentrate in four points: 1) northeast of downtown between I-10 and Collingsworth; 2) north of Tidwell between North Wayside and Mesa; 3) east of Mesa and north of Little York; 4) along FM 526 and close to the Proposed Highway 90.

Demolition permits issued for single-family structures (over 3,000) were more than twice the number of permits issued for new single-family structures. About 63 percent of single-family demolitions were issued for buildings in the Inner Loop. Seventy multi-family buildings with more than 800 units in total were permitted for demolition and were scattered throughout the Sector.

### **Industrial Uses**

Industrial uses cover 18 percent of the total land acreage in the Eastern Sector in comparison with 8 percent for the City. Slightly more than 9,100 acres of industrial land exist in the sector in approximately 2,340 parcels. The average size per parcel is about 3.9 acres, although 10 parcels are more than a hundred acres each. Five of these large parcels are petroleum refineries located primarily south of the Houston Ship Channel and one is located near the Loop between Wallisville and Liberty Roads. Other parcels are used for chemicals, manufacturing and prefabricated warehouses.

### **Trends in Industrial Land Uses**

About 28 percent of the total square footage for new construction in the East Sector was permitted for industrial buildings, more than for any other kind of

new construction. A total of 137 buildings with more than 3 million square feet were permitted between 1992 and 2003. These building permits, including permits for warehousing and manufacturing facilities, were issued for projects located mainly south of Liberty Road, although the largest projects in terms of valuation and square footage were located between Ley Road and East Freeway. A hub of about 10 projects appears in the vicinity of Galveston and Winkler roads.

Since 1999, several industrial plats have been approved for subdivision. The largest, with nearly 135 acres of land is the Anheuser-Busch plant located on Market Street Road and Loop 610. The plant was built in 1989 and has undergone several expansions. About 14 other industrial subdivisions were platted in the area during the study period.

### **Parks and Open Space**

In 2003, parks and open space covered six percent of the land in Eastern Houston compared with 10 percent for the City as a whole. This equates to 8.3 acres of neighborhood, community, regional and metro parks per 1,000 residents. This is one third of the 25.5 acres per 1,000 residents recommended in the City's Parks Master Plan.

The five largest parks in the Eastern Sector with more than 100 acres each include: Herman Brown Park in the vicinity of East US 90 Highway (902 acres); Brock Park at John Ralston Road in the northeast (355 acres); Gus Wortham Park on South Wayside Drive (161 acres); Glenbrook Park in the vicinity of Park Place Boulevard (150 acres); and Mason Park on 75th between Harrisburg Boulevard and Lawndale (102 acres). These are considered to be regional facilities.

Most of the undeveloped parks are located in the north and northeastern part of the Eastern Sector. The City's Parks and Recreation Master Plan of 1999 recommended acquisition of additional land throughout the sector to reduce the park space deficiency.

### **Public and Institutional Land Uses**

Public and institutional land uses take up five percent of the Sector area equivalent to six percent for the city as a whole. They cover more than 2,500



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acres of land and almost 1,600 parcels. These land uses include infrastructure facilities such as pump stations, water and wastewater treatment plants, schools, religious facilities, school stadiums, cultural facilities, hospitals and health centers, police and fire stations, and libraries are scattered throughout the large area.

### **Trends in Public and Institutional land uses**

Between 1992 and 2003, more than 245 new public and institutional buildings were permitted for construction in the Eastern Sector, about 19 percent of all new square footage in the area. About 79 of these were schools or church related uses and 21 public infrastructure facilities. About 38 percent of this new construction was permitted in the Inner Loop, while a large number were permitted north of the Loop, between US 59 and Mesa Drive.

### **Commercial and Office Land Uses**

In 2003, commercial and office land uses occupied 10 percent of the land in the Eastern Sector compared to 6 percent for the City of Houston. Almost 2,800 acres of commercial and office land in more than 3,500 parcels with an average of 0.8 acres per parcel were located in the area. The largest parcel is a golf club with more than 400 acres located in the city limits south of proposed US 90. Commercial and office uses tend to locate along major roads such as Harrisburg, Navigation, Lockwood and Wayside.

### **Trends in Commercial and Office Land Uses**

Between 1992 and 2003, 380 new commercial and office buildings were permitted in the area, totaling over 2,000,000 square feet of building space. On average, these structures tended to be quite small with about 7,600 feet per unit. Many of these buildings permitted were located along major arteries, especially Harrisburg and Navigation Boulevards and their intersection with Wayside, East Freeway, Wallisville and McCarty Roads.

### **Legal Restrictions on the Use of Land**

A number of legal considerations affect land use and other development decisions by placing limitations on new development or by enhancing development opportunities. Such considerations include air pollution mitigation measures, subsidence prevention regulations, neighborhood

deed restrictions and brownfields incentives. These controls are for the most part created to improve the quality of life in the area.

### **Air Pollution**

The Study area encompasses the heart of the Houston petrochemical industry and port that emits the bulk of the region's air pollutants. Harris and seven surrounding counties are considered non-attainment areas under the Federal Clean Air Act Amendments of 1990 (42 United States Code). The EPA expects the Houston-Galveston Area, which includes the Eastern Sector, to attain the 1-hour ozone standard of 0.12 ppm (pounds per minute) by November 15, 2007.

Proposed industrial development in the area would also abide by the Texas Commission on Environmental Quality (TCEQ) rules. These restrictions include point source rules to reduce the amount of nitrogen oxide (NOx) emissions into the air, how rules for handling volatile organic compounds are handled, and requirements for permitting emissions from shipyard facilities and construction activities. The TCEQ has air quality monitoring devices and stations positioned at strategic locations throughout the area.

### **Water Supply/Subsidence**

Severe restrictions on ground water pumping have brought subsidence on the East Side to nearly a halt. Now, 90% of the water for use in the Study area, both potable and for industrial use must come from surface sources. Land subsidence is the loss of elevation of the land surface caused by the withdrawal of fluid. Before subsidence rules were put into place, years of excessive use of groundwater wells resulted in significant land subsidence and entire neighborhoods were permanently flooded and are now abandoned.

### **Deed Restrictions**

Although at one time most of the single-family residences in the Study area had deed restrictions, many have lapsed and are no longer enforceable. Deed restrictions are written agreements with an average life of 25 to 30 years that restrict or limit



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the use or activities that may take place on a property or in a subdivision. Today sections of newer subdivisions like Pecan Park have restrictions that are current and enforceable. Although the City provides limited service to resolve deed restriction issues, the enforcement of deed restrictions is left to the property owners living within a specific community.

## **Housing and Neighborhoods**

Housing in the Study area in general is older than the city as a whole by 30 to 40 years. In the city, 56 percent of structures were built after 1970 and 85 percent after 1950. In the Eastern Sector, 11 percent of structures were built after 1970 and 40 percent after 1950. Thirty nine percent of the structures were built before World War II. The oldest are located south of the Buffalo Bayou.

Housing in the Study area is also generally in worse condition than in the City as a whole. Following the Harris County Appraisal District (HCAD) rating of dwelling physical conditions relative to age and level of maintenance, only 7 percent of houses in the City are rated fair, poor, or unsound. In the Study area, that total is nearly 20 percent. The greatest proportion of dwellings in this category is found north of Liberty Road. Towards the south, housing conditions improve markedly. The greatest proportion of dwellings in very-good conditions is located south of Buffalo Bayou around Pleasantville and Lawndale/Wayside area. In other areas like Denver Harbor/Port Houston housing is mostly frame, less attractive and older.

Housing in the southern part of the Study area around East End is a blend of new brick and frame homes mostly in very good condition. Towards the northern part of the Study area, around East Little York and Trinity/Houston Gardens Super-Neighborhoods, the bulk of the homes are old frame needing much repair. Homes in the Denver Harbor, Pleasantville and Clinton Park Super-Neighborhoods are mostly old frame homes that are still in very good condition.

Significant developments east of downtown such as Minute Maid Park, Toyota Center, the expansion of the George R. Brown Convention Center and new Hilton Americas Convention Hotel have spurred development of high-end multi-family housing in the Study area east of downtown. Should the economy

keep its pace, this trend of new development and good housing would continue to grow into the Greater East End.

In general, home ownership declined throughout the Study area between 1990 and 2000. Owner occupancy generally increases with distance from the central city, with the exception of the western most area of the central sub-sector (Woodland Acres).

According to the Houston Neighborhood Market Drilldown, (an innovative methodology aimed at uncovering hidden economic potential in inner city neighborhoods) the central part of the Study area alone could easily support development of several thousand new residential units over the next 10 years. In summary, throughout the Eastern Sector the quality of housing is mixed; signs of new housing starts were identified alongside older structures in poorer condition.

## **Vacancy Rate**

As with ownership rate, vacancy rates tend to increase with the neighborhood's age, which in most cases corresponds to proximity to Downtown. Also, as with owner-occupancy, the vacancy rate in the Study area dropped although there was an increase in total housing units. The Meadowbrook/Allendale Super-Neighborhood had the lowest vacancy rate at 4.9 percent compared to the rest of the City at 8.2 percent. Other Super-Neighborhoods with lower vacancy rates were Pecan Park, Pleasantville, and East Little York/Homestead at 5.1, 5.2, and 5.3 percent respectively.

In contrast to these low rates, Downtown (27.4 percent), Clinton Park/Fidelity (15.2 percent), Greater Fifth Ward (13.3 percent) and Kashmere Area (12.0 percent) had vacancy rates that exceeded the City rate.

## **Population**

According to the 2000 Census, the total population of the Study area was 273, 412, approximately 14% of the City's total. Also, population in the Eastern Sector grew 4% between 1990 and 2000 compared to a citywide growth rate of nearly 20%. The greater share of this population is concentrated in East Little

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York/Homestead (22,140), Northshore (27,350), Greater Fifth Ward (22,211), and Magnolia Park (21,302). Population density in the area north of the Buffalo Bayou is 2.2 persons per acre. South of the Bayou the population density is 6.8 persons per acre.

The 2002 study, *Houston Neighborhood Market Drill Down*, used a variety of methods to calculate population that is easily missed by the Census (such as immigrants fearful of participating in the Census). Although the Study areas' boundaries do not exactly coincide, this information suggested that the population in the Eastern Sector may be as much as 23% higher than Census information would suggest.

The Eastern Sector experienced significant changes in Hispanic and White populations between 1990 and 2000. The Hispanic population increased 66.9% in the area north of the Bayou, comprising Super Neighborhoods 47 through 58. Conversely, the White population decreased 41.5%. Overall, Settegast had the greatest population loss.

South of the Bayou the Hispanic population also increased significantly, as well as the area comprising Super Neighborhoods 52 through 88 while the White and Black populations decreased. Lawndale/Eastwood experienced the largest population increase (6.8%) while Clinton Park/Fidelity experienced the largest population decrease (19.4%) from 1990-2000. The *Drill Down* study suggests that the population may be even more Hispanic than the census figures showed.

A majority of the population 25 years and older in the Eastern Sector have no high school diploma. In addition the area has the lowest percentage of persons with college degrees compared to the rest of the city.

## Economic Conditions

In 2000, over 5,000 businesses were located in the Eastern Sector employing more than 114,970 people (US Census 2000). Sixty-two percent of these were located south of I-10. Wholesale, retail trade, and services have been the predominant types of industry making up over 60% of all businesses in the Sector in 2000. Professional services comprised

17% of all establishments and manufacturing 9% during the same year. One establishment employs over 11,000 people and four employ 1,000 or more. *Drill Down* data shows that as many as 2/3rds of all businesses in the Sector have been operating for more than 3 years.

The northern portion of the Eastern Sector is a mixture of almost rural residential, light industrial businesses, heavy trucking and warehousing activities, and landfills. Major thoroughfares in the area such as North Wayside, Homestead, Mesa, Ley and Tidwell have very few commercial land uses. The central and southern portions of the Study area are more densely populated and commercial corridors are more active. Heavy industrial uses associated with the petrochemical industry are also located here. While these large plants are growing, light industrial uses are beginning to move to the northwest and western edges of the city to take advantage of inexpensive land and better access to highways.

In 1999, The Greater East End Management District was created to provide services that enhance property values and spur new economic development. The District covers 16 square miles and represents more than 3,000 commercial property owners in the central portion of the Eastern Sector. Some of the services the District provides to commercial property owners include a Security Patrol, graffiti abatement, litter removal and access to workforce training for East End business employers through Houston Community College-Southwest and Texas A&M.

The *Houston Neighborhood Drill Down* study of 2002 uses a number of innovative methods to reveal a more robust economy in the area than Census numbers and other conventional methods indicate. The study includes, among other communities, the Greater Fifth Ward and Greater East End. For example in the Greater Fifth Ward, the *Drill Down* study revealed a market with a population of 45,400 compared with the Census 2000 finding 31,300 residents; a 45.1% differential. The differential accounted for 2,496 more households with active documented credit histories according to the *Drill Down* calculations. The *Drill Down* also revealed a market of 109,442 people compared with Census 2000 findings of 84,379 for the Greater East End

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(includes Denver Harbor, Second Ward, Eastwood/Lawndale, Magnolia Park and Lawndale/Wayside). This hidden population represents unmeasured buying power. The importance of the cash economy in these areas further magnifies the often-unrecognized economic potential. The *Drill Down* study estimates that the cash economy contributes an additional 16% in income to the aggregate household income in these areas (above that measured by Census).

## Infrastructure

### Transportation

Overall, the Study area is fairly well connected in terms of major thoroughfares. Approximately 322 miles of major thoroughfares are listed in the Study area on the *2001 Major Thoroughfare and Freeway Plan*. An additional 14 miles are designated as “To-Be-Acquired”. This means that, on the listed segments, additional right-of-way will need to be acquired as development takes place. These are largely in the northeast portion of the Study area. Fifty-nine miles are listed as “To-Be-Widened” and need additional right-of-way.

Wayside, Navigation, and Harrisburg all serve as major commercial corridors in the southern part of the Study area. Market Street is the primary commercial corridor in the central part of the Study area and Lockwood is an important corridor in the northern part of the Study area.

Two major roads are being proposed that could have a significant impact on future development in the Study area. The first is Beaumont Highway, which will extend from Beltway 8 to Loop 610 and will improve accessibility to the northeastern portion of the Study area. The second is the proposed Interstate 69 corridor providing alternate routes for truck traffic moving between Mexico into the United States. TxDOT is considering US 59 and/or Beltway 8 although other potential alignments for this corridor through/ around Houston are still being studied.

The area’s roads are generally free of heavy congestion. By length, 87% of roads in the Study area rate a Level of Service C (acceptable) or better.

Heavier traffic volumes are found inside Loop 610 on Harrisburg and Wayside. Windshield surveys show that many of the major roads providing access to industrial areas are quite deteriorated due to heavy truck traffic.

### Transit

Metro serves the majority of the Study area; however, the relatively low density of the outer edges of the area makes high levels of connectivity difficult. Bus lines do extend throughout the Study area and link to major Port of Houston entrances. There are 7 transit centers located in the area: Magnolia, Kashmere, Fifth Ward/ Denver Harbor, Tidwell, Mesa, and Maxey Road. In late 2003, voters approved a plan to construct light rail in the Harrisburg corridor connecting to the Main Street Line. This could have a significant impact on future land uses and density south of Buffalo Bayou.

Transit dependency in the Eastern Sector is high. According to 2000 Census, 19 percent of the households (15,507) do not have access to a vehicle. In comparison, only 12 percent of the households for the entire City do not have access to a vehicle.

### Bike Trails

A number of bikeway projects are currently under design: East Brays Bayou Trail, Houston Heritage, Columbia Tap, and Southeast Houston Trails. Others currently under construction are: CBD Access, Harrisburg/Sunset, and North Houston.

### Heavy Rail

The Study area contains 80 miles (24% of total track length within the City) of heavy rail operated by 9 different rail companies. Most of the lines focus on providing access to the Port of Houston. Major companies include Union Pacific, Southern Pacific, Burlington Northern as well as several other smaller companies. Rail traffic in the area is significant, regularly blocking both automobile and pedestrian traffic.

### Water, Wastewater, and Storm Water

One small residential area in the northern part of the Study area is without City water service and large areas of industrial and undeveloped land in the northeast portion of the Study area have limited

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existing water infrastructure. Overall, the Study area has approximately 7.5 million feet of water lines, 17% of which are below 4 inches in diameter. Four inches is considered desirable for adequate water pressure related to fire protection. Existing surface water supplies (Lakes Conroe and Houston, San Jacinto River, Lake Livingston, and Trinity River System) are processed at the East Water Purification Plant (located outside Loop 610 near the Ship Channel on Federal Rd.), which serves the entire City.

Ten Wastewater Service areas are located in the Study area. All the wastewater service areas (but one) have capacity for additional development. The exception is the Northeast Wastewater Treatment Plant that has a projected shortfall in capacity. Expansion of this facility is currently underway and will increase capacity by 1.75 million gallons per day.

Relatively little storm water infrastructure is located north of I-10; most neighborhood drainage here is addressed through open ditches. South of I-10 most neighborhoods have enclosed drainage systems.

The Eastern Sector has a large watershed that drains into the Houston Ship Channel. The watershed includes Greens Bayou, Halls Bayou and Buffalo Bayous.

## **Environmental Conditions**

Environmental issues vary throughout this Study area. Overall, it is a mixed-use community sprinkled with heavy industry. Oil and gas or petrochemical industries are more heavily concentrated in this area compared to the rest of the City. Significant industrial uses such as Type IV landfills (accept municipal solid waste), industrial waste sites, and numerous brownfields cause air, water, and noise pollution, limiting the types of development that can occur in the Study area and impacting environmental conditions in the region as a whole.

Fifteen industrial facilities in the Study area were identified from a list compiled by the TCEQ published in November 2000 as contributing high levels of pollutants to the region effecting the land air and water quality. Houston has been below EPA standards on air pollution because of high levels of particulate matter. Particulate matter contributes to

the creation of smog. Thirty-five permitted industrial waste generators are located in here and the impact on the surrounding residential community over a long-term period could be significant.

In addition, the area's bayous converge in the Eastern Sector providing the principal watershed and drainage for the entire city. Related factors such as the area's climate (proximity to the Gulf Coast), climate, high water table and inadequate drainage channels or water retention facilities makes the area prone to flooding that affects residential development. During Tropical Storm Allison of 2001, the area received a record high amount of rainfall (over 30 inches) within 12 hours that caused a lot of flooding.

## **Air Pollution**

A concentration of heavy industry on Houston's East Side significantly impacts the region's air quality. With over 15 permitted industry facilities in the sector, maintaining a healthy air quality is a key concern.

The Eastern Sector has two stations on Polk and Clinton Roads to test particulate matter in the air. Air test results frequently show the air in the Study area exceed the EPA standard for "Healthy" (125 parts per billion).

Although the Eastern Sector has the bulk of the City's petrochemical industry, the impacts of air pollution to residential development cannot be considered worse than the City. Toxic emissions are hazardous to health. Eastern Houston, with its high potential for toxic emissions, may not be attractive to health related development. The Texas Commission for Environmental Quality standards for measuring air quality involves the entire Gulf Coast Region and not just a particular area in the City.

New regulations could hinder industrial development and heavy equipment operation in the area. Relaxed environmental regulations could also make new residential development less attractive.

## **Water Pollution**

The most important waterways in the area, Buffalo Bayou-Ship Channel, Brays, Sims and Greens



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Bayous, are heavily polluted because of the high concentration of industrial activity in the area. From Greens Bayou to US 59, water can be used only for industrial water supply and navigation. Fish consumption from this water segment is dangerous for human health because of high levels of mercury and dioxin found in the water samplings.

The continued operation and existence of petrochemical plants, industrial waste sites, landfills and brownfields are contributing factors to the overall environmental condition of the area. Thirty-five industrial waste generators have permits to operate and are monitored by the TCEQ. Eleven of these sites are located along the Houston Ship Channel and Sims Bayou.

The quality of potable water system in the area is good for consumption and industrial uses; however, there is great concern in the area about water contamination through leakage from petrochemical storage tanks than the rest of the City. The TCEQ has implemented the “Clean Rivers Program” to address bacteria found in the Buffalo Bayou watershed, and dioxins found in the Houston Ship Channel.

A sample of twelve industrial facilities from EPA database shows that in 1999 most of the chemical releases went to the air and in less degree to the watercourses. Some industrial facilities dispose of their hazardous waste in offsite landfills.

## **Brownfields**

Brownfields are abandoned or under-used industrial or commercial properties with real or perceived environmental contamination. The City of Houston’s Brownfields Redevelopment Program provides funding for environmental testing of eligible sites. This is the first step toward making the properties safe for new development. Though the program has identified and confirmed three brownfield sites in the Eastern Sector since 2001, the area is laden with potential sites for brownfield redevelopments. Two of the sites have already been redeveloped and the third is in progress. Several potential brownfield sites are located along Broadway Boulevard, North Wayside Drive, Lockwood Drive and Homestead Road.

BFI operates two major active landfill facilities in the area. The 465 acre facility located on McCarty Road is type IV (accepts municipal solid waste) and operates 24 hours a day, 7 days a week. At current acceptance volumes, it has approximately 8 years left in operation. A by-product of this landfill is gas or nitrogen oxide.

## **Noise Levels**

The current industrial condition in the surrounding area has existed harmoniously along with residential land use. Industrial noise levels in the area are moderate and closer to the industrial plants and the Houston Ship Channel.

## **Community Organizations and Services**

Community organizations and institutions providing services within the eastern sector include super neighborhood councils, civic clubs, Management Districts, school districts, community colleges, private schools, public libraries, law enforcement and fire protection services.

Twenty super neighborhoods are located within the sector. Of these, 18 are located entirely within the eastern sector and two are partially located within the Study area. Thirteen of the super neighborhoods have recognized councils and super neighborhood action plans (SNAP). The primary focus of the SNAPs is capital improvement and neighborhood protection issues. Several of the SNAPs include items involving the construction of multi-purpose community centers. (See Table 1 for a complete list of super neighborhoods within the sector.)

Additional community organizations are engaged in projects to enhance the community. Kashmere Gardens Super Neighborhood Council is working on the beautification of SPARK Park at McDade Elementary School and Oaklawn/Fullerton Civic Association is involved in a street lighting installation and Rails-to-Trails construction. Other projects include a mixed-used development project near East Little York and Wayside, a multi-purpose community center near Parker and Homestead, providing a bus shelter for children at Tidwell and Mesa, and increased police protection to combat

illegal drugs and gang activity by the East Houston Super Neighborhood Council.

The school districts included in the Eastern Sector are Aldine ISD, Galena Park ISD, Houston ISD, and North Forest ISD. Seven private schools are located within the sector. Houston Community College operates two campuses, Eastside Center and Codwell Hall & Training Centers (Northeast campus). The total school enrollment from pre-kindergarten to the college level is over 64,000. (See Table 2 for a list of all educational facilities within the sector and the enrollment for each facility.)

Eleven Houston Public Libraries are located within the Eastern Sector. Seven are within the 610 Loop, three are outside the northern boundary of 610, and one is outside the eastern boundary of 610. Because of the high cost of library facility improvements, the Library Master Plan through a survey conducted by consultants concluded that there was a favorable

response to raising taxes and partnering with the private sector to support costly library capital improvements.

## Public Safety

The Eastern Sector consists of 22 police beats. Of these, 18 beats are located entirely within the sector and four beats are partially located within the sector. The police substations located within the sector are East Patrol (Magnolia) and Northeast Patrol. Police storefronts are located on Lyons Avenue, Market Street, and Ripley House on Navigation Street.

The violent crime rate for the City of Houston was 1,123 per 100,000 people in 1998. Crime statistics show that violent crime offenses in the Eastern Sector decreased slightly from 1999 to 2000. In the Eastern Sector, the violent crime rate was 1,374 per 100,000 people in 1999. In 2000, the violent crime rate lowered to 1,292 per 100,000 people.

The Eastern Sector has 30 fire stations located within it or in close proximity to it.

The East End Management District operates an anti-graffiti program to remove or paint over graffiti on commercial properties. The Management District has a partnership with Baker Hughes' Central City Industrial Park Security Association, Inc. (CCIP) and Harris County Precinct 6 to provide additional law enforcement services to commercial property owners within the Greater East End.

**Table 1: Super Neighborhood Councils**

Number	Name	Recognized Council
47	East Little York/Homestead	Yes
48	Trinity/Houston Gardens	Yes
49	East Houston	Yes
50	Settegast	Yes
52	Kashmere Area	Yes
53	El Dorado/Oates Prairie	No
54	Hunterwood	No
55	Greater Fifth Ward	Yes
56	Denver Harbor/Port Houston	Yes
57	Pleasantville Area	Yes
58	Northshore	No
59	Clinton Park/Fidelity	Yes
63	Second Ward	No
64	Eastwood/Lawndale	Yes
65	Harrisburg/Manchester	Yes
70	Pecan Park	No
74	Park Place	No
75	Meadowbrook/Allendale	No
82	Magnolia Park	Yes
88	Lawndale/Wayside	Yes

**Table 2: Educational Facilities**

Educational Facility	Enrollment
Houston Community College	3,492
Aldine ISD	262
Galena Park ISD	2,349
Houston ISD	44,119
North Forest ISD	12,485
Private schools	1,343
<b>Total</b>	<b>64,050</b>



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## **PART III: ANTICIPATED FUTURE DEVELOPMENT AND RECOMMENDATIONS**

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## PART III: ANTICIPATED FUTURE DEVELOPMENT AND RECOMMENDATIONS

This section assesses opportunities and constraints for growth in the Eastern Sector and lays out recommendations for enhancing the climate for new development in the area. At the same time, these ideas seek to protect and enhance viable existing residential, commercial and industrial uses.

Growth in the Eastern Sector has been sluggish over the past 20 years due in part to aging infrastructure and the lure of development opportunities to the west. In addition, poor housing conditions and a low skilled labor force have done little to attract major growth. Overall, the sector's population will increase over the next 20 years, but at a much slower rate than the City as a whole. The Eastern Sector, however, covers a large and diverse area with varying prospects for future development.

Though home ownership is highest north of the Eastex Freeway, population has been declining steadily, the population is growing older and vacancy rates are high. It is likely that the lack of connectivity to other areas as well as insufficient residential retail and amenities is driving younger populations to other areas of the City. This northernmost area has a suburban/rural character and both light industrial and residential infill opportunities are abundant.

Though some undeveloped properties exist in the central section of the study area, redevelopment of the area's numerous industrial sites will be key to revitalization. In fact, multifamily housing and commercial construction are already gaining momentum due to a number of factors including renewed interest in Downtown's eastern edge and the Buffalo Bayou Master Plan. Developers and homeowners are taking advantage of the area's close proximity to the central business district and major freeways. Sites that were once industrial are being developed as moderate to high-income housing. Density here in the east end, south of Buffalo Bayou, will most likely increase to meet demand and accommodate rising land values.

Farther south, population has been increasing and vacancy rates are low. The population is much younger here and much of the growth is probably due to migration from Central America. Here, development is not keeping pace with population growth, perhaps due to the area's low median income and overall low educational attainment. However, the recent Gulf Gate Mall redevelopment illustrates that a significant market for retail and services exists in the southern portion of the study area.

Many of the jobs in the sector are industrial and will remain industrial due to the presence of the Ship Channel. It is considered the biggest port in the U.S. in terms of tonnage and the Port of Houston Authority is one of the City's largest employment/activity centers. A high level of industrial activity associated with the Port is concentrated along Buffalo Bayou, which extends along the eastern section of the study area. Although most of the area freeways serving the port are adequate, the major thoroughfares in the Eastern Sector linking the port to the rest of the community are inadequate to handle the increasing truck traffic to and from the port. These thoroughfares include Clinton Drive, Navigation, Wayside, Lockwood, Broadway and Market Street.

While some large petrochemical plants have expanded, the small, light industry that has traditionally anchored these Eastern Sector communities has been moving west to areas with better access and cheaper land. Poor transportation linkages and lack of available land mean significant growth for these businesses will be difficult. Areas further to the north in which land is more readily available also suffer from weak transportation linkages and poor access by the labor force.

Low educational and income levels throughout the sector pose additional challenges. Despite these issues, neighborhood participation in Super Neighborhood activities and community planning efforts is high. Of the eighteen Super Neighborhoods in the Eastern Sector, (11) 61% have Neighborhood Councils. In comparison to Super Neighborhoods in the City only (41) 46% had Super Neighborhood Councils. The study area also has civic associations registered with the City Planning and Development

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Department. Such high level of civic interest from the community is a significant asset that can spur growth and improve its quality of life.

The Greater East End Management District can play a crucial role in addressing issues related to economic development in a large portion of the study area. For over five years, the District has been serving as a catalyst for new development activity in a 16 square mile area extending east from Downtown along Harrisburg to the City's boundaries. The District is poised to tap into the vibrant growth on the eastern edge of Downtown following the construction of Minute Maid Park, Brown Convention Center Extension, Hilton Hotel and Toyota Center. While the entire Sector still lags behind in economic recovery compared to the rest of the City, the Management District is using some significant tools like beautification and economic surveys to attract residential and commercial development and retain the area's rich culture and character.

Super Neighborhood Action Plans in the Eastern Sector can also play a role in revitalizing the area. These Super Neighborhood Action Plans propose a wide range of improvement projects including street resurfacing, demolition of abandoned property, landscaping, sidewalk improvements, rail grade separation, construction of new multi-service centers and expansion of existing facilities, speed humps, drainage, traffic signals, more parks, affordable housing, fire stations and job development programs.

The Harrisburg corridor is poised to benefit from several large-scale projects currently in the planning stages. The Buffalo Bayou Plan East Sector (East End) proposes to enhance the community image and create jobs. Other benefits would include increased opportunities for residential development, bikeways, boating facilities, parks and creation of signature features, focal points and tourism destinations. These improvements can easily complement the development likely to follow the extension of Light Rail Transit (LRT) from downtown along Harrisburg Avenue. The LRT will surely spur mixed-use higher density commercial and residential development because of increased access to downtown. Adequate investment and coordination related to these two efforts could provide stimulus for the entire sector.

Another potential engine for economic development is US 90, planned to cut through the northern section of the study area. This corridor is currently underdeveloped and, therefore this highway project, provides a great opportunity for future commercial and industrial development to the north east of the City.

Further to the south, the proposed Hobby Airport Enhancement Plan provides another opportunity for spurring economic recovery in the Eastern Sector. Although the proposed plan south of the study area only invokes the possibility of extending the concept north to the study area, the potential economic benefits of the plan are enormous and this plan can be replicated along Broadway north of I-45.

The following recommendations provide the framework for developing recommendations or strategies to revitalize the economy of the Eastern Sector:

## **Recommendations**

To guide anticipated future development, the following two strategies for fostering a positive climate for economic development and revitalization are needed:

1. Set citywide and regional priorities for infrastructure, mobility and environmental problems (i.e. brownfields, flooding, etc.)
2. Create a coalition of stakeholders from the study area to develop a broad plan for the area based on extensive public involvement and community consensus that considers its significant physical elements, relates to citywide and regional development trends, and takes into account social and economic factors. (A dialogue should be undertaken with major property owners, relevant governmental agencies and others to further define the issues and determine what type of organizational structure would be most beneficial for such a coalition.) The plan should include priorities and implementation strategies.

Setting citywide and regional priorities is an essential strategy for achieving growth in the area. The CIP could be an important tool for establishing these priorities and for implementing planning actions that

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will change the development climate in this area. Integrating an area-wide plan based on community consensus with capital improvement programming could greatly benefit the process of setting priorities, coordinating capital investments and leveraging existing investments for greater impact. In addition, several regional and citywide plans, including the Major Thoroughfare and Freeway Plan, the Harris County Flood Control District watershed plans, Harris-Galveston Coastal Subsidence District Plan, Metro's South Corridor Study and long and short term State transportation plans could be used to determine priorities and coordinate plans and actions.

The broad area-wide plan would be a framework for decision-making that would include a set of recommendations for its implementation. These recommendations would address issues of development/redevelopment, accessibility and infrastructure, environmental constraints, neighborhood conservation and improvement and commercial corridor development. Achieving public consensus on goals and objectives for development will be an essential component of the planning process.

## **New Development/Redevelopment**

Opportunities for new development or redevelopment in the Eastern Sector already exist. The following actions can build on these opportunities.

### **Land Use**

- Create transition areas between residential and industrial land uses by encouraging areas of appropriate mixed uses such as commercial/office and industrial/commercial.
- Encourage mixed development (residential/commercial) along Harrisburg. Such development along this corridor would provide the appropriate/desired development mix needed to implement The Buffalo Bayou Plan and the Metro Solutions Plan.
- Include affordable housing in the proposed development mix. The area has numerous

pockets of developable land infill. This effort could be achieved through the Land Assembly Redevelopment Authority recently created by the City and through a program that would offer incentives to neighborhood industries to relocate to industrial parks with freeway access.

- Encourage residential development on large parcels of undeveloped land northeast of Tidwell and West Little York.
- Create parks along the Bayous. Buffalo Bayou, Greens Bayou, and several other small bayous drain the Eastern Sector. These drainage corridors provide an excellent opportunity to develop parks that would enhance the quality of life within the Eastern Sector community and the City at large. Although the Buffalo Bayou Plan already addresses some park and drainage issues, the introduction of similar plans along the other bayous would provide added aesthetics that attract development and improve the quality of life.
- Promote commercial retail development along North Wayside where it intersects with Mount Houston, Little York, Tidwell and Crosstimbers.
- Develop a commercial corridor along Broadway north of I-45 to simulate the Hobby Airport Enhancement Plan proposed along Broadway south of I-45 and the Hobby Airport vicinity. Creating such a corridor would improve north-south mobility and attract new development.
- Encourage industrial development along Liberty Road. Liberty Road runs along the Union Pacific rail line and still has extensive tracts of land available for industrial development. Although there is industrial development along this corridor, growth has been very slow. TIRZ and/or other incentives can be used to attract investment.
- Use urban design elements to incorporate a historical theme along Harrisburg,

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highlighting its rich heritage. In 1826, John Richards Harris, a native of Missouri moved to Texas and founded the Town of Harrisburg, which later grew to be the Houston of today. Harris County was named after John Harris and Harrisburg served for a short time as capitol of the Republic of Texas. A 1998 economic development survey conducted by the Greater East End Management District also identified the area's historical heritage as one of the major attractors of business to the area.

- Promote conversion of inactive landfills to golf courses or other recreational uses. The Eastern Sector has two inactive landfills and has a potential for additional inactive landfills in the future. Areas with golf courses serve as magnets for high value development and enhancement to the community quality of life.
- Use urban design elements to create a visibly nautical theme along the Ship Channel. The significance of the Houston Ship Channel and the Port of Houston to the study area and the City cannot be overemphasized. Creating a nautical theme would help the community to recognize and appreciate the importance of the Port in the area.
- Promote creation of small industrial parks with freeway access to encourage small neighborhood industries to relocate to areas more compatible with their use. Some of the Eastern Sector's major transportation corridors such as US 90, Liberty Road and I-10 W, have access to the freeways and can still absorb several industrial parks. Should the small industrial parks scattered over the area relocate along major transportation corridors, they would provide additional land for housing or commercial development.
- Explore the possibility of using legal instruments available such as TIRZ, EZ and NEZ to encourage industrial development along strategic corridors such as Little York Road, North Wayside and US 90 Highway

and protect adjacent residential areas from commercial and industrial encroachment. Creating such incentives would provide investment leverage to potential developers.

- Encourage industrial development southeast of Broadway and south of SH 225.

### **Infrastructure/Mobility/Safety**

- Create dedicated trucking routes to minimize negative impacts of trucking on neighborhoods. Designated routes would be improved to handle large and heavy vehicles. Major Thoroughfares such as Clinton Drive, Liberty Road, Harrisburg, Wayside, Navigation, Lyons Street, 610 Loop, I-10 W, US 90, Maxey Road and Market Street are used heavily by truck traffic to and from the port. Such a designation would improve general mobility, traffic safety and help to channel the limited road infrastructure funds where they are most needed.
- Enhance roadways, underpasses and pedestrian walkways. Implement a streetscape improvement program similar to the \$2.7 million project funded largely by the Texas Department of Transportation in the entire Eastern Sector. Similar programs can be developed through Super-neighborhood Councils working in coordination with the City, County and State Department of Transportation.
- Improve safety around railroad tracks. This can be done by conducting an inventory of the rail crossings, collecting and analyzing train/pedestrian and auto accident data and then designing and implementing the necessary remedies.
- Coordinate existing security measures with industry to improve and protect the infrastructure surrounding the Port. In 2003, the Port of Houston Authority received \$1.8 million from Congressional Appropriations for Port security. It also received an additional \$4.37 million from the Office of Domestic Preparedness. The Port is seeking another



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\$13 million for a cohesive security program that will include surveillance and protection of the infrastructure. Extending port security to the surrounding neighborhoods would improve the quality of life and enhance development.

- Improve accessibility along key corridors and consider grade separation at major rail intersections. Building rail grade separations at major road intersections would improve mobility and minimize traffic gridlock.

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## **PART IV: COST AND REVENUE ANALYSIS FOR SELECTED MICRO-AREA ECONOMIC DEVELOPMENT**

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## **PART IV: COST AND REVENUE ANALYSIS FOR SELECTED MICRO-AREA ECONOMIC DEVELOPMENT**

The Eastern Sector's 17,800 acres of developable land provide an excellent opportunity to guide development, leveraging Houston's existing infrastructure and accommodating a large portion of the City's projected population growth. This can be accomplished through a combination of infrastructure improvements, environmental remediation, economic incentives.

The completion of State Highway 90 will enhance east-west mobility and increase opportunities for development along the corridor. The widening of East Little York will also improve east-west mobility and both residential and industrial investment opportunities. Similarly, the proposed extension of North Wayside to Beltway 8 will improve north-south mobility and increase the potential for new residential development in this area. A large undeveloped property could be developed as a residential subdivision with quick access to State Highway 59 and Beltway 8. The Port of Houston and affiliated industries in the sector will continue to expand and create jobs and a proposed light rail line on Harrisburg would stimulate both residential and commercial growth. New employment will provide a cash flow to improve the quality of life increasing land values and the City's tax base.

Although a number of conditions will increase the cost of development within this sector, if the issues of infrastructure and access are addressed, the potential for new development and for the economic stabilization of the study area is very positive. Two micro-areas with development/redevelopment potential within this sector were identified with the purpose of estimating the general cost of providing infrastructure for projected future development. For these areas, two population and employment scenarios were examined to illustrate the potential tax revenues that might be realized if 1) current growth patterns continued over the next 20 years, and 2) if growth rates are more aggressive over the

next 20 years. Note that this analysis is intended for illustrative purposes only and does not suggest that infrastructure investments estimated here will alone result in accelerated population and employment growth.

The method for projecting population and employment was tailored for each micro-area. Traffic Analysis Zone projections from Houston-Galveston Area Council were used for Scenario 1 projections, unless otherwise noted. Total build out scenarios, regional growth rates, regional population and employment shares, building permit activity and other factors were used to generate projections for Scenario 2.

### **Study Areas**

Two micro-areas in the sector were selected for analysis, based on their development potential, which takes into account existing conditions and constraints and significant amounts of vacant, developable land. Future development in the Wayside micro-area is anticipated to be largely residential and commercial with some light industrial. This area has some large undeveloped tracts of land. The Harrisburg micro-area, on the other hand, provides a more challenging opportunity for future growth because of large numbers of infill land opportunities or redevelopment of industrial, commercial and residential parcels.

### **1. Population and Employment Estimates**

#### **General assumptions**

The study anticipates that population growth in Houston will continue along established patterns of migration to the suburbs and employment will be drawn to major activity centers. The micro-areas (Harrisburg and Wayside) will be under increasing influence of the Port of Houston, transportation, the petrochemical industry and extensive improvement of the road and rail network.

Population decline in the micro-areas, an effect of migration to the suburbs, could be slowed down or reversed by policy interventions to address unemployment, homeownership, transportation needs and poor housing conditions. New residential

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development could occur in current vacant land or in abandoned industrial or commercial sites with minimal environmental contamination.

The first scenario, which assumes a continuation of current trends in population and employment with minimal city investment, is based on three county (Harris, Fort Bend and Montgomery) estimates. In this scenario, the population share of the Wayside micro-areas will decrease slightly to 3.26% in 2025 from 3.82% in 2000. With intervention, the population share could increase from 3.26% to 4.62% by 2025. Also with intervention, the employment share could increase from 1.57% in 2000 to 1.88% by 2025 assuming that the industrial and commercial sectors of the economy remain strong (see Appendix B). Following current trends, the Harrisburg micro-area population share will decrease from 2.99% in 2000 to 1.42% by 2025. With intervention, the population share in the Harrisburg micro-area could increase from 1.42 to 3.59 in 2025.

The second scenario is predicated on strong intervention that addresses the issues presented in the existing conditions analysis. This includes but is not limited to infrastructure improvement to targeted areas especially along Harrisburg and N. Wayside, environmental remediation, park improvements along the Bayou, extension of the Metro rail to East End, heavy rail safety and mobility improvements, revitalizing distressed neighborhoods and encouraging better use of commercial land. First, build-out scenarios were prepared based on prevailing densities, average family size, standard floor area ratios and standard employee per square foot measures (see Appendix B). Then, regional growth rates, regional population and employment shares and building permit data were examined to determine what proportion of the build out scenario would occur over the planning horizon. In Scenario 2 population share of the micro-areas as part of the metropolitan area would stabilize.

Note that micro-areas were chosen for illustrative purposes only. Scenario 2 assumes that some population and employment would be drawn to the area if improvements were made; however, conditions in these micro-areas have not been compared with similar areas in the Eastern Houston

sector. Population and employment shares were compared with regional figures from the Houston-Galveston Area Council (particularly, Harris County, Fort Bend County and Montgomery County).

## Harrisburg Micro-Area

### Area character and trends

The Harrisburg micro-area covers 3,912 acres and had a population of 58,455 according to the 2000 census. Over 14 % of the land is undeveloped; 10% is industrial and about 6% is commercial.

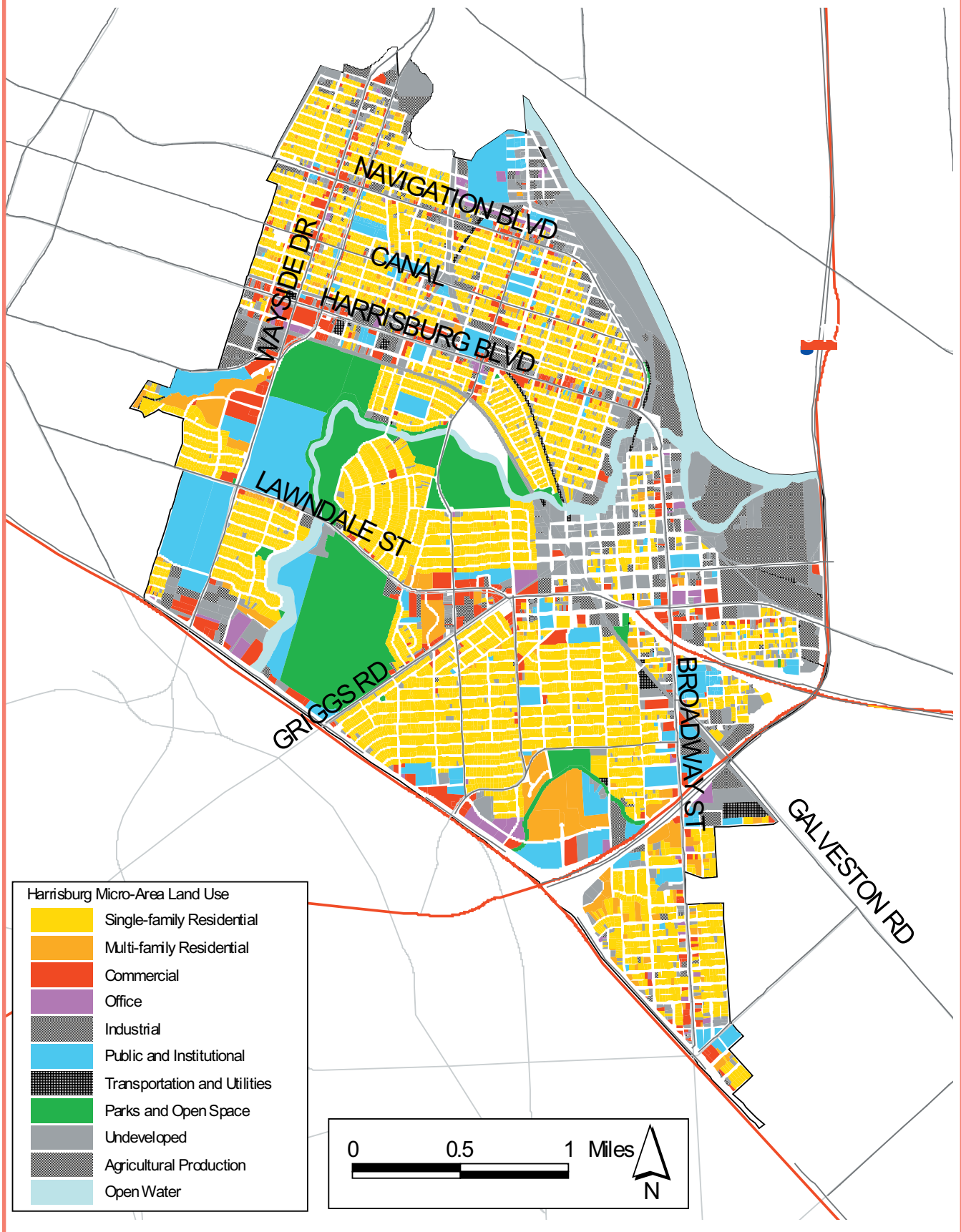
Prospects for commercial and residential redevelopment in the area are high. This would be partly due to recent improvements in the east end of downtown such as the Minute Maid Stadium, the Toyota Center, expansion of the George R. Brown Convention Center and the new Hilton of the Americas Convention Hotel and partly due to proposed improvements at the port and related industries.

### Projected Growth Scenarios

In Scenario 1, growth in the Harrisburg micro-area is assumed to continue as predicted in H-GAC's moderate growth scenario. H-GAC's estimates were developed using a geographic boundary called Traffic Analysis Zones (TAZ). Since TAZs do not correspond with the Harrisburg micro-area boundary, an average estimate of those that were largely represented in the micro-area was calculated. The resulting growth rate was used to represent the yearly growth rate for the micro-area.

Scenario 2 assumes a more aggressive growth rate due to intervention in infrastructure and related investment by the City. In this scenario, population and employment would increase by almost 3%. This increase corresponds to over 6,911 in single-family units and 7,223 multi-family units for the 25- year projection period. A similar increase in employment could also generate an additional 15,229 jobs for the same period (see table). Note that these projections are used for illustrative purposes only and do not necessarily reflect the actual figures for the period.

Map 4: Harrisburg Micro-Area Land Use



Source: COHGIS



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# Wayside Micro-Area

## Area Character and Trends

The Wayside micro-area covers 3,961 acres and had a population of 16,268 according to the 2000 census. Over 30 % of the land is undeveloped; 18% is industrial and only about 1% is commercial. Population is projected to increase by 0.89% and employment by 2.35% each year. This increase would result in an increase of 966 single-family units and 48 multi-family units over the 25-year period. The projected increase in employment (2.35%) would also yield an additional 4,186 jobs.

Scenario 2 represents the results of a stronger intervention that increases the current growth rate of development. In this scenario, both population and employment of the Wayside Micro-Area would increase by 2.5% each year. These projected increases would yield 3,428 single-family units, 170 multi-family units and 4,453 jobs over 25 years (see table).

## 2. Revenue Estimates

### General assumptions

Tax revenues for the City generated by new growth were estimated for both scenarios in the two micro-areas.<sup>1</sup> Ad valorem taxes, sales taxes and hotel taxes were all estimated. It is assumed that:

- No major economic changes in the real estate market occur throughout the period;
- Annual growth rate is constant;
- Ad valorem property, sales and hotel occupancy tax rates do not increase;
- All single-family units are homestead properties eligible to receive homestead exemptions;
- All institutional structures are tax exempt; and
- All commercial square footage generates sales tax.

The Harrisburg Micro-Area lies between the east end of Downtown and the Port of Houston. Economic development along the east end of Houston

Downtown has been robust and promising partly due to the advent of the Minute Maid Park, the Toyota Center, the new Hilton of the Americas Convention Hotel and recent extension of the Brown Convention Center. The resurgence of high-end housing initiative like the Alexan Lofts, proposed Metal Town Homes (with a Downtown view), additional hotel space and restaurants are apparent signs of the growth pattern on this part of the City. The projected development in the area would have a high potential of including warehousing, transportation, housing infill/redevelopment, high-tech industrial and the petrochemical industry.

Another positive enhancer for future job growth in the Harrisburg Micro-Area is the Greater East End Management Workforce Development Initiatives program. In this unique program, the Greater East End is charged with spending 3% its annual district assessment funds for workforce development services through partnership with the Houston Community College-Southeast. Such development efforts have a potential to yield significant results in the form of additional tax revenues.

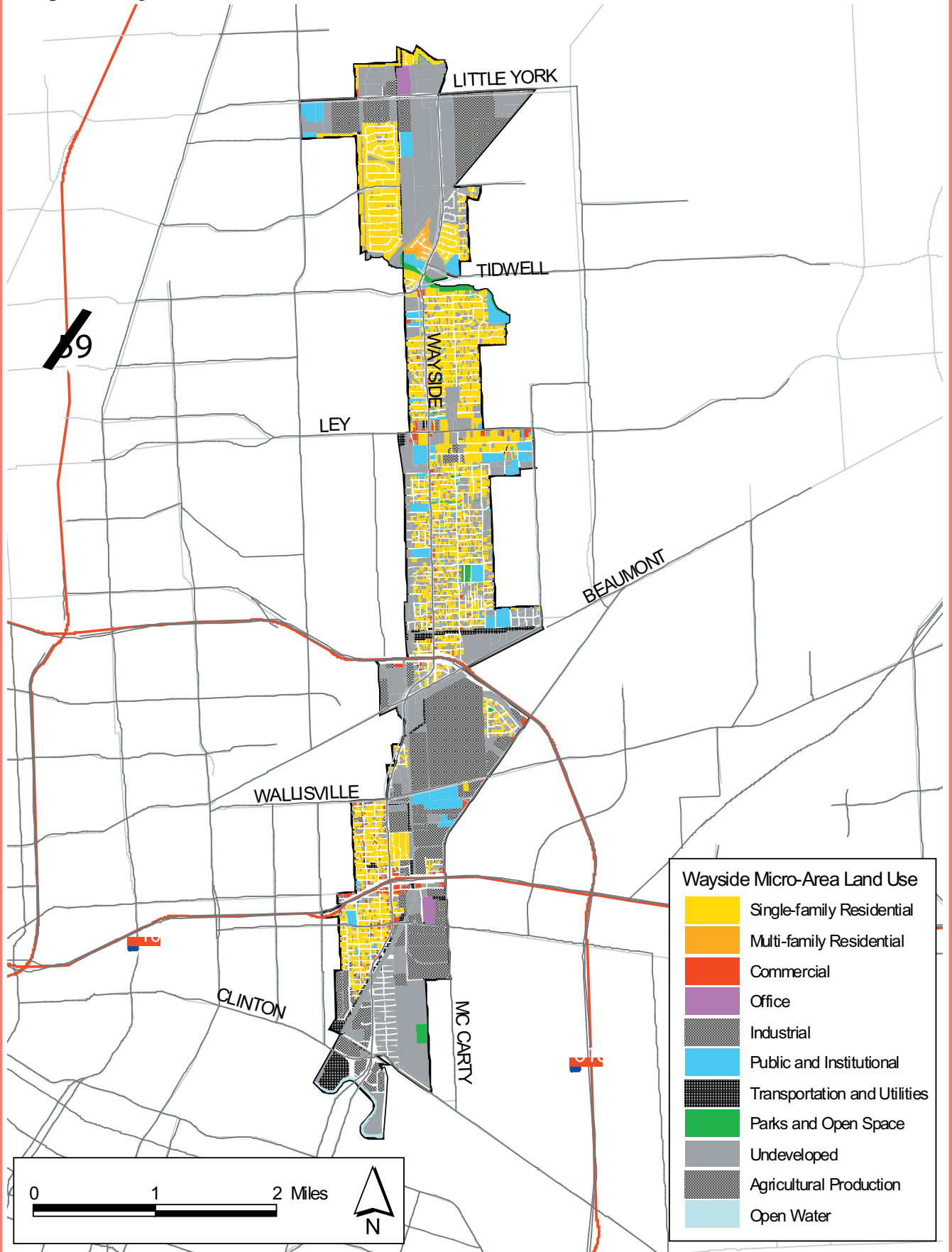
## 3. Infrastructure Cost Estimates

The cost of constructing water and sewer lines in undeveloped areas, improving existing water and wastewater lines and of completing major thoroughfares was explored to give a rough estimate of the magnitude of CIP investment needed to address infrastructure issues discussed earlier in this report. Following is a description of the general improvements considered along with linear footage and cost per linear foot.

## 4. Regional Share Analysis

Examining population and employment growth as part of a regional share analysis provides insight on how projected growth for the Eastern Sector study area and micro-areas (Wayside and Harrisburg) compare to larger, regional growth trends for population and employment. If an area has a growing regional share it is performing better than surrounding areas. If an area maintains a constant share the area is neither gaining nor losing ground compared to the region. If an area is losing regional

**Map 5: Wayside Micro-Area Land Use**



Source: COHGIS

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share, it is growing more slowly than the surrounding region.

This analysis shows that, if current trends continue, compared to the rest of the City and the larger 3-county region (Harris, Montgomery Fort Bend), the east sector will lose population and employment share as the region grows more quickly than the sector. The intervention scenarios proposed have the potential to alter this outcome such that the study area could surpass City of Houston growth and maintain a constant share compared to the 3-county region.

#### **Note:**

In this exercise 2003 employment data was utilized because 2000 sector level employment data was not available. Different employment estimate methods can produce widely divergent employment total estimates. In this exercise the 2003 sector level data is from a different source than the base from which the 2025 estimates are derived and therefore the methodologies are probably different. Given this inconsistency, the share percentage may well be incorrect. However, since a consistent comparison is used between 2003 and 2025 for the intervention scenario, the relative changes accurately indicate the intervention scenario's potential relative to a non-intervention scenario even if the regional share is in doubt.

### **General Assumptions**

The cost of providing water, wastewater and roads was calculated by estimating the length of new facilities needed to serve future growth. Of the three components of cost (capital, maintenance and interest), we assume that the most important would be the cost of capital; therefore the model uses only this component.

Figures for calculating unit costs were provided by the Department of Public Works and Engineering and are listed in Appendix D. Costs were calculated for Scenario 2 only because this scenario is built on the assumption of additional infrastructure requirements, while Scenario 1 is not. Projects already in the CIP were not included in the estimates.

## **Wayside Micro-Area**

Infrastructure costs in this area were based on the installation of new water and wastewater trunk lines to underserved areas, replacing 1.275 million feet of water lines that are too small, widening Little York between US 59 and Wayside, and extending Wayside north to Beltway 8. Analysis by City of Houston Public Works and Engineering estimates that investment for additional or upgraded lines needed to support the growth predicted in the Scenario 2 would be approximately \$1.2 million in water lines and \$5.1 million in wastewater lines. The cost to improve the major thoroughfare network (Little York from US 59 to Wayside) would be \$11.1 million

## **Harrisburg Micro-Area**

The Harrisburg micro-area has a fairly well developed infrastructure system for water and wastewater. However, much of this system is quite old and may lack the capacity needed to support new development and increased densities. Analysis by City of Houston Public Works and Engineering estimates that investment for additional or upgraded lines needed to support the growth predicted in the Scenario 2 would be approximately \$1.7 million in water lines and \$4.9 million in wastewater lines. Scenario 2 was not based on any significant roadway improvements.

(Footnotes)

<sup>1</sup> Revenues for other taxing jurisdictions including Harris County and HISD are not considered.

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# **APPENDIX A: SUPER NEIGHBORHOOD PROFILES**

SN #	Super Neighborhood	Total Housing Units 2000	Total Housing Units 1990	Growth	Percent
47	EAST LITTLE YORK/HOMESTEAD	7,511	7,639	-128	-1.7%
48	TRINIT/HOUSTON GARDENS	6,844	7,442	-598	8.7%
49	EAST HOUSTON	6,122	6,126	-4	-0.1%
50	SETTEGAST	1,703	1,964	-261	-13.3%
52	KASHMERE AREA	4,784	5,300	-516	
53	EL DORADO/ OATES PRAIRIE	764	1,044	-280	-26.8%
54	HUNTERWOOD	872	958	-86	-9.0%
55	GREATER FIFTH WARD	8,756	1,0457	-1701	-16.3%
56	DENVER HARBOR/ PORT HOUSTON	5,256	5,502	-246	-4.5%
57	PLEASANTVILLE AREA	1,470	1,409	61	4.3%
58	NORTHSHORE	8,914	9,125	-211	-2.30%
59	CLINTON PARK/FI- DELITY	1,073	1,280	-207	-16.2%
63	SECOND WARD	4,344	4,493	-149	-3.3%
64	EASTWOOD LAWN- DALE	4,760	4,908	-148	-3.0%
65	HARRISBURG/MAN- CHESTER	1,077	1,268	-191	-15.1%
67	GREATER THIRD WARD	6,350	8,295	-1945	-23.4%
68	OST/SOUTH UNION	7,805	8,333	-528	-6.3%
69	GULFGATE/PINE VALLEY	3,574	3,543	31	0.9%
70	PECAN PARK	5,360	5,475	-115	-2.1%
75	MEADOWBROOK/ ALLENDALE	7,049	7,039	10	0.1%
82	MAGNOLIA PARK	6,430	6,389	41	0.6%
88	LAWNDALE/WAY- SIDE	4,450	5,016	-556	-11.3%
	TOTAL	105,268	11,3005	-4153	

Source: U.S. Census Bureau, 2000



SN #	SUPER NEIGHBORHOOD	Total Housing Units 1990	VACANT UNITS 1990	VACANCY RATE	Total Housing Units 2000	VACANT UNITS 2000	VACANCY RATE
47	EAST LITTLE YORK/HOME- STEAD	7,639	S	10.3%	7,511	396	5.3%
48	TRINIT/HOUS- TON GARDENS	7,442	1,371	18.4%	6,844	741	10.8%
49	EAST HOUSTON	6,126	1,047	17.1%	6,122	378	6.2%
50	SETTEGAST	1,964	311	15.8%	1,703	162	9.5%
52	KASHMERE AREA	5,300	1,005	19.0%	4,784	576	12.0%
53	EL DORADO/ OATES PRAIRIE	1,044	92	8.8%	764	46	6.0%
54	HUNTERWOOD	958	105	11.0%	872	84	9.6%
55	GREATER FIFTH WARD	10,457	2,767	26.5%	8,756	1,165	13.3%
56	DENVER HAR- BOR/PORT HOUS- TON	5,502	716	13.0%	5,256	368	7.0%
57	PLEASANTVILLE AREA	1,409	77	5.5%	1,470	77	5.2%
58	NORTHSHORE	9,125	1,407		8,914	805	9.0%
59	CLINTON PARK/ FIDELITY	1,280	169	13.2%	1,073	164	15.3%
63	SECOND WARD	4,493	736	16.4%	4,344	345	7.9%
64	EASTWOOD LAWNDALE	4,908	831	16.9%	4,760	513	10.8%
65	HARRISBURG/ MANCHESTER	1,268	258	20.3%	1,077	84	7.8%
67	GREATER THIRD WARD	8,295	2,482	29.9%	6,350	1,119	17.6%
68	OST/SOUTH UNION	8,333	1,573	18.9%	7,805	769	1.0%
69	GULFGATE/PINE VALLEY	3,543	561	15.8%	3,574	159	4.4%
70	PECAN PARK	5,475	511	9.3%	5,360	274	5.0%
75	MEADOWBROOK/ ALLENDAL	7,039	786	11.2%	7,049	349	5.0%
82	MAGNOLIA PARK	6,389	885	13.9%	6,430	570	8.9%
88	LAWNDALE/WAY- SIDE	5,016	719	14.3%	4,450	357	8.0%
	TOTAL	113,005			105,268		

Source: U.S. Census Bureau, 2000

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## **APPENDIX B:**

# **PROJECTED POPULATION, EMPLOYMENT, LAND USES, REVENUES AND COSTS BY MICRO-AREA**

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# Base-Line Land Use, Population and Employment Estimates: Harrisburg Micro-Area

## 1. Land Use

Land use for each micro-area is compiled into a total for each use by feet and acres. Building square feet is also totaled by use. Both of these figures come from 2003 Harris County Appraisal District (HCAD) data.

## 2. Projected Population and Employment by Micro-Area

The methodology used to create the projections for each micro-area considered a number of factors including land use, population, growth trends and development capacity. The terms and assumptions described below apply to both micro-areas.

The population for each micro-area comes from 2000 Census block group level data. Current employment estimates are from 2003 ABI business data, which was obtained from Houston-Galveston Area Council (H-GAC). This data contains addresses for businesses with a number range of employees at the site. The midpoint of the employee range was used to estimate the number of employees at each business. Businesses with addresses inside the micro-area were selected and the employee estimates totaled. Population and employment growth is calculated by applying a constant amount of growth to each year within the forecasted 25-year time frame.

### Scenario 1

In both micro-areas, Scenario 1 assumes that growth in each micro-area will continue as predicted in H-GAC's moderate growth scenario. H-GAC provides a moderate and an aggressive estimate for both population growth and job growth. The only assumption that changes between the moderate and aggressive scenarios is that of an increase in energy sector activity. This corresponds to a 12% increase in professional sector employment and a 25% increase in the mining sector. For Scenario 1, H-GAC's moderate growth rate was used.

These H-GAC estimates were developed using a geographic boundary called Traffic Analysis Zones (TAZ). These TAZs do not correspond with the boundaries identified with the micro-areas. In order to apply these estimates to the micro-area, an average of all the TAZs that are substantially represented in the micro-area was calculated. This total growth rate was then translated into a yearly growth rate for the micro-area. The H-GAC population growth rate was applied to growth in residential units and the H-GAC employment growth rate was applied to the growth in other employment related land uses.

### Scenario 2 – Harrisburg and Wayside

For both micro-areas Scenario 2 assumes that a substantial intervention would occur to change development patterns and increase growth in the micro-areas. These calculations also assume a constant growth applied equally each year over the 25-year timeframe. The methodology for calculating growth rates in each micro-area is different; each methodology is outlined in a separate section.

## 3. Floor Area Ratio

The Floor Area Ratio (FAR) shown in Allocation of Vacant Land table represents the amount of space on a parcel of land that is taken up by building structure. This is a function of many different influences including land use, development type and density, parking requirements, etc. These FARs were calculated by averaging total parcel square feet by total building square feet for each land use. Multiplying the FAR by the total of the Re-Developable land and the Undeveloped Land (called Developable Land in the table) creates an estimate for the total amount of building square feet available. This number, provided for each land use where it is applicable, represents the total development possible based on previously outlined assumptions.

Basing this analysis on current FARs, assumes that any additional development would occur at current density levels. Increased development frequently brings increasing FARs (greater density), which would allow for more development than forecasted in Scenario 2.

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## Current Land Use

Future land development will not necessarily continue in the same proportion of uses as currently exists. For example, in the Harrisburg Micro-Area, the transportation and utilities grid is largely complete. Therefore, future development is assumed to require no significant increase in land for transportation and utilities. These figures have been set to better reflect the allocation of uses that new development is most likely to exhibit.

For purposes of this build-out/growth analysis, all Undeveloped Land is presumed to be developable. Because of location, underutilization or other factors, redevelopment of existing uses will occur. To account for this a “redevelopment ratio” based on current trends and professional judgment is applied to existing land use totals to arrive at an additional quantity of re-developable land.

## Growth Scenarios

Because of fundamental differences between the types of growth anticipated, the two micro-areas different methodologies were used to calculate the growth rates applied in Scenario 2.

### 1. Harrisburg Micro-Area

#### Scenario 1

In Scenario 1, the population for the Harrisburg Micro-Area is projected to increase by 0.96% each year and employment is projected to increase by 1.3 % each year. This corresponds to a 2,226-unit increase in single-family residences and a 2,326-unit increase in multi-family residences over 25 years. Employment is projected to increase at 1.3% or 27,172 employees.

#### Scenario 2

Scenario 2 presumes positive growth and therefore imputes a positive growth rate commensurate with established natural trends and projected growth factor enhancements. A composite and integrated growth rate calculation is based on Population Growth Projections (City of Houston and H-GAC rates); Economic Activity Growth projections (Market Study Sources); Land Use Development Growth projections imputed from major factor

enhancement prototype impact activity rates (Rail / Main Street Corridor); and other social dynamics modifying growth impact projections from area demand generators (Proximity to CBD, Beltway 8 – long term, Ship Channel Owner/User warehousing distribution logistics, access to interstate highways, improvements to Buffalo Bayou and governmental designations of Enterprise Zones). The composite rate is further reflected against City and regionally assigned rates for a determination of reasonability. In order to determine an appropriate growth rate a “multiplicity factor” has been developed to allow for an accurate comparison between various factors impacting growth in the area.

The results show a much stronger growth brought about by intervention that increases the current rate of development. In this scenario, both the population and employment for the Harrisburg Micro-Area increases by 2.97 % of the base each year. This corresponds to a 6,911 unit increase in single-family residences and a 7,223 unit increase in multi-family residences over 25 years. Employment is assumed to increase at the same rate as population, which leads to an additional 15,229 workers over 25 years (See table for additional square feet of space in each employment category).

“Multiplicity Factor” = How much above or below an established benchmark growth rate the Micro-Areas are expected to perform under Scenario 2 conditions.

Population Growth Rates (natural trends)  
City of Houston derivations from Study Areas 4 and 5 (average) 1990 - 2000  
2.5% in Study Areas as compared to:

Midtown	4.8%
Southwest	2.8%
Citywide	1.9%

\*Multiplicity Factor: 1

H-GAC assigned rates for 2025 projections (larger area geography)

0.96% in Study Areas per year

As compared to:	
Midtown	1.3%
Southwest	1.4%
Citywide (TAZs that touch COH)	2.2%

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\* Multiplicity factor: 1.5

### **Economic Activity Growth Rates (specific study summaries)**

Industrial space absorption rate: 0.87% per year  
Houston Industrial Market Study, Second Quarter, 2003  
As compared to:  
Midtown/CBD: .40%  
Southwest: .61%

\* Multiplicity factor: 1.3

### **Harrisburg Market Analysis, Second Quarter, 2003**

0.87% per year  
As compared to none

Office space net absorption rate  
2003 Houston Office Outlook:  
4.4% per year  
As compared to  
Southwest: 2.8%

\* Multiplicity factor 1

### **Land Use Development Growth Rates (major factor impact derivation)**

Overall 2020 growth derived from rail — P&D Study for Main Street  
3.1% (average of 3.4%, population; 2.8%)

The overall growth predicted due to rail (3.1%) has been adjusted down 70% to better reflect the potential impact of rail on Harrisburg in comparison to the Main Street Corridor. This number should be considered in relation to the final adjusted growth rate derived from the multiplicity factors.  
Estimated growth for Harrisburg with rail = 2.2%

\*\* Average multiplicity factor = 1.2%

### **Calculation approach**

1. Take base as the average of 2.5% (Population) and 2.21% (Development) = 2.35%
2. Multiply by the average of the multiplicity factors, i.e.  $2.35\% \times 1.2\% = 2.82\%$

3. Adjust further by any other significant growth factor enhancer effects as plausible.

a. Proximity to CBD	– add 0.05%
b. Impact of Bayou Improvements	– add 0.07%
c. Impact of TIRZ	– add 0.03%
Total Adjustment	0.15%

4. Final Growth Rate:  $2.82\% + 0.15\% = 2.97\%$   
(Applied to population and employment growth for Harrisburg micro-area).

## **2. Wayside Micro-Area**

Future land development will not necessarily continue in the same proportion of uses as currently exists. The allocation of available land has been set to better reflect the allocation of uses that new development is most likely to exhibit.

For purposes of this build-out/growth analysis, all Undeveloped Land is presumed to be developable. Because of location, underutilization or other factors, redevelopment of existing uses will occur. To account for this a “redevelopment ratio” based on current trends and professional judgment is applied to existing land use totals to arrive at an additional quantity of re-developable land.

### **Scenario 1**

In Scenario 1 the population for the Wayside Micro-Area increases by 0.89% each year and the employment increases 2.35% each year. This corresponds to a 966 unit increase in single-family residences and a 48 unit increase in multi family residences over 25 years. Employment increases more than population – 2.35% of the base per year over 25 years for a total of 4,186 workers.

### **Scenario 2**

Scenario 2 represents the results of much stronger growth brought about by intervention that increases the current rate of development. In this scenario, the population for the Wayside Micro-Area increases 2.5% each year and the employment increases 2.5% each year. This corresponds to a 3,428 unit increase in single-family residences and a 170 unit increase in multi-family residences over 25 years. Employment increases by 2.5% of the base each year to add a total of 4,453 jobs over 25 years (See table for



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additional square feet of space in each employment category).

## Wayside Growth Rate Calculation Methodology

Land use, residential development and population are calculated for Wayside with a projection extending to 2025 from a 2000 base year. Projections were based on a scenario predicated construction of a master planned community in the existing area utilizing selected tracts of land.

To determine the growth rate for Scenario 2, we identified sufficient vacant land, (476 acres) for a large master planned community. We calculated the average number of persons per household and multiplied it by the total number of lots available for development.

Density requirements for New Residential Development are based on City Ordinances. Our calculations formulated the square footage required of a typical Lot size including roads.

**Standard Lot Size** = 5,000 sq. feet  
\* Based on a standard lot of 50' x 100'

**Standard Lot Size w/ Roads** = 6,250 sq. feet  
\* Based on a standard lot 50' x 100' w/50 ft frontage road, utilizing 25 ft for each home.

1. Divide 43,560 square feet (1 acre) 6,250 square feet, which is the average lot size of a single-family home.
  - a. 1 Acre  
43,560 sq. ft./acre
  - b. Average Lot Size  
6,250 sq. ft.**Total Lots Per Acre** = 7 Lots / acre

Based on our scenario, there are 476 acres of potential residential new development land available. In order to show how many lots were required to build out on the development the total lots per acre (7) was divided by the total acreage (476).

- a. Total Lots Per Acre: 7 Lots
  - b. Number of Acres for Potential Development: 476 Acres
- Total # of Lots for New Development : 3,332 Lots*

### Population:

Population projections are based on the Total # of Lots for New Development and calculated by averaging the number of persons per household and assuming one household per lot. Multiplying the Average Persons per household by the Total Number of Lots for New Development provides the population of the proposed development at full build out in 25 years.

- a. Average Persons Per Household: 3.1
- b. Total # of Lots for New Development: 3,332
- c. Total # of Population at build out: 10,329

### Final Growth Rate:

With a total projected population increase of 10,329 it is possible to calculate a growth rate. The steps used to calculate the growth rate are as follows:

1. Divide Build Out Population by the Base Population to achieve the total increase. Dividing the total increase by the 25-year growth period provides the yearly increase.
2. Figures used in calculations:
  - a. Build out Population: 10,329
  - b. Base Population: 16,268
  - c. 25 Year Increase in Population: .634
  - d. Build out Time Frame: 25
  - e. Growth Rate: 2.5% per Year

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# APPENDIX C: COST REVENUE OVERVIEW

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## East Sector Cost Revenue Overview

As detailed in the Revenue Analysis portion of this report, the Intervention Scenarios for both Harrisburg and Wayside micro-areas have the potential to dramatically increase tax revenue to the City of Houston (see table below for summary). However, the growth in the Intervention Scenarios that produces these tax revenue increases assumes a level of City investment infrastructure necessary to support the predicted growth.

**Summary of Micro-Area Projected Revenue**

	Harrisburg Revenue	Wayside Revenue
Scenario 1	\$ 44.3 million	\$24.0 million
Scenario 2	\$111.6 million	\$94.0 million
<b>Increase</b>	<b>\$ 67.3 million</b>	<b>\$70.0 million</b>

tate the growth predicted in the Intervention Scenario, Little York would need to be widened from US 59 east to North Wayside at a cost of approximately \$11 million.

## Conclusions

The costs outlined here are not intended to be exhaustive or exact. They do, however, indicate the strong probability that growth spurred by the investment levels shown in the Intervention Scenarios would result in substantial increases in tax revenue.

## Water/ Wastewater

The Harrisburg micro-area has a fairly well developed infrastructure system for water and wastewater. However, much of this system is quite old and may lack the capacity needed to support new development and increased densities. Analysis by City of Houston Public Works and Engineering estimates that investment for additional or upgraded lines needed to support the growth predicted in the Intervention Scenario would be approximately \$1.2 million in water lines and \$5.1 million in wastewater lines.

The Wayside micro-area is much less densely developed than the Harrisburg micro-area and might require installation of more new lines. Analysis by City of Houston Public Works and Engineering estimates that investment for additional or upgraded lines needed to support the growth predicted in the Intervention Scenario would be approximately \$1.7 million in water lines and \$4.9 million in wastewater lines.

## Street Infrastructure

While the Harrisburg micro-area could probably benefit from upgraded street infrastructure, no specific recommendations are made in this study because information on individual street pavement condition is not readily available. In order to facili-

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# APPENDIX D: MICRO-AREAS

# Wayside Micro-Area: Base Scenario

Base Year (2000)		2000-2025		Projected Total New Units/SqFT	Annual % Increase
Land-use	Units/BdgSqft	% change			
SF	4,340 units	966	0.22	0.89%	
MF	372 units	83	0.22	0.89%	
Retail/Service	2,140,876 sqft	1,257,765	0.59	2.35%	
Office	1,359,920 sqft	798,718	0.59	2.35%	
Industrial	31,993,568 sqft	18,796,215	0.59	2.35%	

## Base Assumptions:

Annual residential growth rate was determined by adding 0.89% of the 2000 base each year for the next 25 years.  
 Annual commercial/industrial growth rate was determined by adding 2.35% of the 2000 base each year for the next 25 years.  
 No economic changes in the real estate market throughout the projected period  
 No increase in ad valorem property tax rates, sales tax rates, or hotel occupancy tax rates  
 All single-family units, including condominiums, are homestead properties  
 All institutional structures are tax exempt  
 All commercial square footage generates sales tax  
 All office square footage is taxable

Year	Yr	SF		MF		Retail/Service		Office		Industrial		Total Property Tax		Total Consumer		Total fiscal revenue	
		cumulative units added from year 1	prop tax rev	cumulative units added from year 1	prop tax rev	cumulative sqft added	prop tax	cumulative sqft added	prop tax	cumulative sqft added	prop tax	Property Tax	Consumer Tax	Consumer Tax	All Taxes		
2000	0	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2001	1	39	\$ 16,195	3	\$ 1,761	50,311	\$ 14,604	31,949	\$ 11,335	751,849	\$ 96,996	\$ 139,133	\$ 94,731	\$ 94,731	\$ 233,864	\$ -	\$ -
2002	2	77	\$ 32,390	7	\$ 3,523	100,621	\$ 29,208	63,897	\$ 22,669	1,503,697	\$ 193,992	\$ 281,782	\$ 189,462	\$ 189,462	\$ 471,244	\$ -	\$ -
2003	3	116	\$ 48,586	10	\$ 5,284	150,932	\$ 43,811	95,846	\$ 34,004	2,255,546	\$ 290,988	\$ 422,673	\$ 284,192	\$ 284,192	\$ 706,865	\$ -	\$ -
2004	4	155	\$ 64,781	13	\$ 7,045	201,242	\$ 58,415	127,795	\$ 45,339	3,007,394	\$ 387,984	\$ 563,564	\$ 378,923	\$ 378,923	\$ 942,467	\$ -	\$ -
2005	5	193	\$ 80,976	17	\$ 8,807	251,553	\$ 73,019	159,744	\$ 56,673	3,759,243	\$ 484,980	\$ 704,455	\$ 473,654	\$ 473,654	\$ 1,178,109	\$ -	\$ -
2006	6	232	\$ 97,171	20	\$ 10,568	301,864	\$ 87,623	191,692	\$ 68,008	4,511,092	\$ 581,976	\$ 845,346	\$ 588,365	\$ 588,365	\$ 1,413,731	\$ -	\$ -
2007	7	270	\$ 113,366	23	\$ 12,329	352,174	\$ 102,226	223,641	\$ 79,343	5,262,940	\$ 678,972	\$ 986,237	\$ 663,116	\$ 663,116	\$ 1,649,353	\$ -	\$ -
2008	8	309	\$ 129,562	26	\$ 14,091	402,485	\$ 116,530	255,590	\$ 90,677	6,014,789	\$ 775,968	\$ 1,127,128	\$ 757,846	\$ 757,846	\$ 1,884,975	\$ -	\$ -
2009	9	348	\$ 145,757	30	\$ 15,852	452,795	\$ 131,434	287,538	\$ 102,012	6,766,638	\$ 872,964	\$ 1,268,019	\$ 852,577	\$ 852,577	\$ 2,120,596	\$ -	\$ -
2010	10	386	\$ 161,952	33	\$ 17,613	503,106	\$ 146,038	319,487	\$ 113,347	7,518,486	\$ 969,960	\$ 1,408,901	\$ 947,308	\$ 947,308	\$ 2,356,218	\$ -	\$ -
2011	11	425	\$ 178,147	36	\$ 19,375	553,416	\$ 160,642	351,436	\$ 124,682	8,270,335	\$ 1,066,956	\$ 1,549,801	\$ 1,042,039	\$ 1,042,039	\$ 2,591,840	\$ -	\$ -
2012	12	464	\$ 194,342	40	\$ 21,136	603,727	\$ 175,245	383,385	\$ 136,016	9,022,183	\$ 1,163,952	\$ 1,690,692	\$ 1,136,770	\$ 1,136,770	\$ 2,827,462	\$ -	\$ -
2013	13	502	\$ 210,538	43	\$ 22,897	654,038	\$ 189,849	415,333	\$ 147,351	9,774,032	\$ 1,260,948	\$ 1,831,583	\$ 1,231,501	\$ 1,231,501	\$ 3,063,064	\$ -	\$ -
2014	14	541	\$ 226,733	46	\$ 24,659	704,348	\$ 204,453	447,282	\$ 158,686	10,525,881	\$ 1,357,944	\$ 1,972,474	\$ 1,326,231	\$ 1,326,231	\$ 3,298,705	\$ -	\$ -
2015	15	579	\$ 242,928	50	\$ 26,420	754,659	\$ 219,057	479,231	\$ 170,020	11,277,729	\$ 1,454,940	\$ 2,113,365	\$ 1,420,962	\$ 1,420,962	\$ 3,534,327	\$ -	\$ -
2016	16	618	\$ 259,123	53	\$ 28,182	804,969	\$ 233,660	511,180	\$ 181,355	12,029,578	\$ 1,551,936	\$ 2,254,256	\$ 1,515,693	\$ 1,515,693	\$ 3,769,949	\$ -	\$ -
2017	17	657	\$ 275,318	56	\$ 29,943	855,280	\$ 248,264	543,127	\$ 192,690	12,781,426	\$ 1,648,932	\$ 2,395,147	\$ 1,610,424	\$ 1,610,424	\$ 4,005,571	\$ -	\$ -
2018	18	695	\$ 291,514	60	\$ 31,704	905,591	\$ 262,868	575,077	\$ 204,024	13,533,275	\$ 1,745,928	\$ 2,536,038	\$ 1,705,155	\$ 1,705,155	\$ 4,241,193	\$ -	\$ -
2019	19	734	\$ 307,709	63	\$ 33,466	955,901	\$ 277,472	607,026	\$ 215,359	14,285,124	\$ 1,842,924	\$ 2,676,929	\$ 1,799,885	\$ 1,799,885	\$ 4,476,815	\$ -	\$ -
2020	20	773	\$ 323,904	66	\$ 35,227	1,006,212	\$ 292,076	638,974	\$ 226,684	15,036,972	\$ 1,939,920	\$ 2,817,820	\$ 1,894,616	\$ 1,894,616	\$ 4,712,436	\$ -	\$ -
2021	21	811	\$ 340,099	70	\$ 36,988	1,056,522	\$ 306,079	670,923	\$ 238,028	15,788,821	\$ 2,036,916	\$ 2,958,711	\$ 1,989,347	\$ 1,989,347	\$ 4,948,068	\$ -	\$ -
2022	22	850	\$ 356,295	73	\$ 38,750	1,106,833	\$ 321,283	702,872	\$ 249,363	16,540,669	\$ 2,133,912	\$ 3,099,602	\$ 2,084,078	\$ 2,084,078	\$ 5,183,660	\$ -	\$ -
2023	23	888	\$ 372,490	76	\$ 40,511	1,157,143	\$ 335,887	734,821	\$ 260,698	17,292,518	\$ 2,230,908	\$ 3,240,493	\$ 2,178,809	\$ 2,178,809	\$ 5,419,302	\$ -	\$ -
2024	24	927	\$ 388,685	79	\$ 42,272	1,207,454	\$ 350,491	766,769	\$ 272,032	18,044,367	\$ 2,327,904	\$ 3,381,384	\$ 2,273,539	\$ 2,273,539	\$ 5,664,924	\$ -	\$ -
2025	25	966	\$ 404,880	83	\$ 44,034	1,257,765	\$ 365,094	798,718	\$ 283,367	18,796,215	\$ 2,424,900	\$ 3,522,275	\$ 2,368,270	\$ 2,368,270	\$ 5,890,545	\$ -	\$ -
total		12,553	\$ 5,263,442	1,076	\$ 572,437	16,350,940	\$ 4,746,228	10,383,334	\$ 3,683,773	244,350,799	\$ 31,523,697	\$ 45,787,819	\$ 30,787,513	\$ 30,787,513	\$ 76,575,332	\$ -	\$ -

Note: Consumer Tax includes sales tax and hotel occupancy tax

Assumptions:		Source:	
Projection time frame	25 years	City of Houston P&D assumption	
Ad valorem property tax rate	\$ 0.665 per \$100 valuation	City of Houston	
Rate of collection	97%	Harris County Appraisal District	
Homestead exemption rate	20%	Harris County Appraisal District	
HISD Homestead ex amount	\$ 15,000	Harris County Appraisal District	
SF construction cost	\$ 100,000 per unit	Conservative estimate based on Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average (\$159,926)	
MF construction cost	\$ 46,700 per unit	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail/Service	\$ 45 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Office	\$ 55 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Industrial	\$ 20 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail occupancy rate	85%	CB Richard Ellis and O'Connor and Associates	
Retail sales generated	\$ 221.52 per 1sqft	O'Connor and Associates (See Below)	
Sales tax rate	1%	City of Houston	

Retail Occupancy for the Eastern Sector was obtained from the 4th quarter overview for the Houston area retail submarkets. Due to the Eastern Sector study overlapping three geographical boundaries identified as the retail submarkets by C B Richard Ellis, I combined the occupancies for the three areas. The average retail occupancy for the Eastern Sector submarket is 85%.



# Wayside Micro-Area: Intervention Scenario

Base Year (2000)		2000-2025	
Land-use	Units/Bdg Sqft	Projected Total New Units/SqFT	Annual % Increase
SF	4,340 units	2,713	2.50%
MF	372 units	232	2.50%
Retail/Service	2,140,876 sqft	1,338,048	2.50%
Office	1,359,520 sqft	849,700	2.50%
Industrial	31,993,558 sqft	19,995,974	2.50%

## Base Assumptions:

Annual growth rate was determined by adding 2.50% of the 2000 base each year for the next 25 years.  
 No economic changes in the real estate market throughout the projected period  
 No increase in ad valorem property tax rates, sales tax rates, or hotel occupancy tax rates  
 All single-family units, including condominiums, are homestead properties  
 All institutional structures are tax exempt  
 All commercial square footage generates sales tax  
 All office square footage is taxable

Year	Yr	SF	MF	Retail/Service		Office		Industrial		Total Property Tax	Total Consumer	Total fiscal revenue
		cumulative units added from year 1	cumulative units added from year 1	prop tax	sales tax	cumulative sqft added	prop tax	cumulative sqft added	prop tax	Property Tax	Consumer Tax	All Taxes
2000	0	-	-	\$ 53,522	\$ -	-	\$ -	-	-	\$ -	\$ -	\$ -
2001	1	109	9	\$ 15,536	\$ 100,777	33,988	\$ 12,058	799,839	\$ 103,187	\$ 176,283	\$ 100,777	\$ 277,060
2002	2	217	19	\$ 31,072	\$ 201,555	67,976	\$ 24,116	1,599,678	\$ 206,374	\$ 362,442	\$ 201,555	\$ 563,997
2003	3	326	28	\$ 46,608	\$ 302,332	101,964	\$ 36,175	2,399,517	\$ 309,562	\$ 543,663	\$ 302,332	\$ 845,996
2004	4	434	37	\$ 62,144	\$ 403,110	135,952	\$ 48,233	3,199,356	\$ 412,749	\$ 724,884	\$ 403,110	\$ 1,127,994
2005	5	543	46	\$ 77,680	\$ 503,867	169,940	\$ 60,291	3,999,195	\$ 515,936	\$ 906,105	\$ 503,867	\$ 1,409,993
2006	6	651	56	\$ 93,216	\$ 604,665	203,928	\$ 72,349	4,799,034	\$ 619,123	\$ 1,087,327	\$ 604,665	\$ 1,891,991
2007	7	760	65	\$ 108,752	\$ 705,442	237,916	\$ 84,407	5,598,873	\$ 722,311	\$ 1,268,548	\$ 705,442	\$ 1,973,990
2008	8	868	74	\$ 124,287	\$ 806,220	271,904	\$ 96,465	6,398,712	\$ 825,498	\$ 1,449,769	\$ 806,220	\$ 2,255,988
2009	9	977	84	\$ 139,823	\$ 906,997	305,892	\$ 108,524	7,198,551	\$ 928,685	\$ 1,630,990	\$ 906,997	\$ 2,537,987
2010	10	1,085	93	\$ 155,359	\$ 1,007,775	339,880	\$ 120,582	7,998,389	\$ 1,031,872	\$ 1,812,211	\$ 1,007,775	\$ 2,819,985
2011	11	1,194	102	\$ 170,895	\$ 1,108,552	373,868	\$ 132,640	8,798,228	\$ 1,135,059	\$ 1,993,432	\$ 1,108,552	\$ 3,101,984
2012	12	1,302	112	\$ 186,431	\$ 1,209,329	407,856	\$ 144,698	9,598,067	\$ 1,238,247	\$ 2,174,653	\$ 1,209,329	\$ 3,363,983
2013	13	1,411	121	\$ 201,967	\$ 1,310,107	441,844	\$ 156,756	10,397,906	\$ 1,341,434	\$ 2,355,874	\$ 1,310,107	\$ 3,665,981
2014	14	1,519	130	\$ 217,503	\$ 1,410,884	475,832	\$ 168,814	11,197,745	\$ 1,444,621	\$ 2,538,095	\$ 1,410,884	\$ 3,947,980
2015	15	1,628	139	\$ 233,039	\$ 1,511,662	509,820	\$ 180,873	11,997,584	\$ 1,547,808	\$ 2,718,316	\$ 1,511,662	\$ 4,229,978
2016	16	1,736	149	\$ 248,575	\$ 1,612,439	543,808	\$ 192,931	12,797,423	\$ 1,650,996	\$ 2,899,537	\$ 1,612,439	\$ 4,511,977
2017	17	1,845	158	\$ 264,111	\$ 1,713,217	577,796	\$ 204,989	13,597,262	\$ 1,754,183	\$ 3,080,758	\$ 1,713,217	\$ 4,793,975
2018	18	1,953	167	\$ 279,647	\$ 1,813,994	611,784	\$ 217,047	14,397,101	\$ 1,857,370	\$ 3,261,980	\$ 1,813,994	\$ 5,075,974
2019	19	2,062	177	\$ 295,183	\$ 1,914,772	645,772	\$ 229,105	15,196,940	\$ 1,960,557	\$ 3,443,201	\$ 1,914,772	\$ 5,357,972
2020	20	2,170	186	\$ 310,719	\$ 2,015,549	679,760	\$ 241,164	15,996,779	\$ 2,063,744	\$ 3,624,422	\$ 2,015,549	\$ 5,639,971
2021	21	2,279	195	\$ 326,255	\$ 2,116,327	713,748	\$ 253,222	16,796,618	\$ 2,166,932	\$ 3,805,643	\$ 2,116,327	\$ 5,921,969
2022	22	2,387	205	\$ 341,791	\$ 2,217,104	747,736	\$ 265,280	17,596,457	\$ 2,270,119	\$ 3,986,864	\$ 2,217,104	\$ 6,203,968
2023	23	2,496	214	\$ 357,327	\$ 2,317,881	781,724	\$ 277,338	18,396,296	\$ 2,373,306	\$ 4,168,085	\$ 2,317,881	\$ 6,485,967
2024	24	2,604	223	\$ 372,862	\$ 2,418,659	815,712	\$ 289,396	19,196,135	\$ 2,476,493	\$ 4,349,306	\$ 2,418,659	\$ 6,767,965
2025	25	2,713	232	\$ 388,398	\$ 2,519,436	849,700	\$ 301,454	19,995,974	\$ 2,579,681	\$ 4,530,527	\$ 2,519,436	\$ 7,049,964
total		35,263	3,022	\$ 17,394,618	\$ 32,752,673	11,045,100	\$ 3,918,908	259,947,659	\$ 33,535,847	\$ 58,891,915	\$ 32,752,673	\$ 91,644,588

Note: Consumer Tax includes sales tax and hotel occupancy tax

Assumptions:		Source:	
Projection time frame	25 years	City of Houston P&D assumption	
Ad valorem property tax rate	\$ 0.665 per \$100 valuation	City of Houston	
Rate of collection	97%	Harris County Appraisal District	
Homestead exemption rate	20%	Harris County Appraisal District	
HISD Homestead ex amount	\$ 15,000	Harris County Appraisal District	
SF construction cost	\$ 100,000 per unit	Conservative estimate based on Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average (\$159,926)	
MF construction cost	\$ 46,700 per unit	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail/Service	\$ 45 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Office	\$ 55 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Industrial	\$ 20 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail occupancy rate	85%	CB Richard Ellis and O'Connor and Associates	
Retail sales generated	\$ 221.52 per 1sqft	O'Connor and Associates (See Below)	
Sales tax rate	1%	City of Houston	

Retail Occupancy for the Eastern Sector was obtained from the 4th quarter overview for the Houston area retail submarkets. Due to the Eastern Sector study overlapping three geographical boundaries identified as the retail submarkets by C B Richard Ellis, I combined the occupancies for the three areas. The average retail occupancy for the Eastern Sector submarket is 85%.

# Harrisburg Micro-Area: Base Scenario

Base Year (2000)		2000-2025		Annual % Increase
Land-use	Units/BdgSq ft	Projected Total New Units/SQFT	% change	
SF	9,307 units	2,234	0.24	0.96%
MF	372 units	89	0.24	0.96%
Retail/Service	3,011,353 sqft	978,690	0.33	1.30%
Office	689,777 sqft	224,178	0.33	1.30%
Industrial	5,280,186 sqft	1,716,060	0.33	1.30%

## Base Assumptions:

Annual residential growth rate was determined by adding .36% of the 2000 base each year for the next 25 years.  
 Annual commercial/industrial growth rate was determined by adding 1.30% of the 2000 base each year for the next 25 years.  
 No economic changes in the real estate market throughout the projected period  
 No increase in ad valorem property tax rates, sales tax rates, or hotel occupancy/tax rates  
 All single-family units, including condominiums, are homestead properties  
 All institutional structures are tax exempt  
 All commercial square footage generates sales tax  
 All office square footage is taxable

Year	SF		MF		Retail/Service		Office		Industrial		Total Property Tax		Total Consumer		Total fiscal revenue	
	yr	units added from year 1	prop tax rev	cumulative units added from year 1	prop tax rev	cumulative sqft added	prop tax	sales tax	cumulative sqft added	prop tax	prop tax	property tax	consumer tax	consumer tax	property tax	all taxes
2000	0	-	\$ -	-	\$ -	-	\$ -	-	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2001	1	89	\$ 37,462	4	\$ 1,900	39,148	\$ 11,363	\$ 73,712	8,967	\$ 3,181	\$ 8,866	\$ 60,866	\$ 73,712	\$ -	\$ 134,577	\$ 134,577
2002	2	179	\$ 74,923	7	\$ 3,800	78,295	\$ 22,727	\$ 147,424	17,934	\$ 6,363	\$ 17,711	\$ 125,524	\$ 147,424	\$ -	\$ 272,947	\$ 272,947
2003	3	268	\$ 112,385	11	\$ 5,700	117,443	\$ 34,090	\$ 221,135	26,901	\$ 9,544	\$ 26,567	\$ 188,286	\$ 221,135	\$ -	\$ 409,421	\$ 409,421
2004	4	357	\$ 149,847	14	\$ 7,600	156,590	\$ 45,454	\$ 294,847	35,868	\$ 12,725	\$ 35,422	\$ 251,048	\$ 294,847	\$ -	\$ 545,895	\$ 545,895
2005	5	447	\$ 187,309	18	\$ 9,499	195,738	\$ 56,817	\$ 368,559	44,836	\$ 15,907	\$ 44,278	\$ 313,810	\$ 368,559	\$ -	\$ 682,369	\$ 682,369
2006	6	536	\$ 224,770	21	\$ 11,399	234,886	\$ 68,181	\$ 442,271	53,803	\$ 19,088	\$ 53,133	\$ 376,572	\$ 442,271	\$ -	\$ 818,842	\$ 818,842
2007	7	625	\$ 262,232	25	\$ 13,299	274,033	\$ 79,544	\$ 515,982	62,770	\$ 22,269	\$ 61,989	\$ 439,334	\$ 515,982	\$ -	\$ 955,316	\$ 955,316
2008	8	715	\$ 299,694	29	\$ 15,199	313,181	\$ 90,908	\$ 589,694	71,737	\$ 25,451	\$ 70,844	\$ 502,096	\$ 589,694	\$ -	\$ 1,091,790	\$ 1,091,790
2009	9	804	\$ 337,155	32	\$ 17,099	352,328	\$ 102,271	\$ 663,406	80,704	\$ 28,632	\$ 79,700	\$ 564,858	\$ 663,406	\$ -	\$ 1,228,264	\$ 1,228,264
2010	10	893	\$ 374,617	36	\$ 18,999	391,476	\$ 113,635	\$ 737,118	89,671	\$ 31,813	\$ 88,556	\$ 627,619	\$ 737,118	\$ -	\$ 1,364,737	\$ 1,364,737
2011	11	983	\$ 412,079	39	\$ 20,899	430,623	\$ 124,998	\$ 810,830	98,638	\$ 34,995	\$ 97,411	\$ 690,381	\$ 810,830	\$ -	\$ 1,501,211	\$ 1,501,211
2012	12	1,072	\$ 449,541	43	\$ 22,799	469,771	\$ 136,362	\$ 884,541	107,605	\$ 38,176	\$ 106,267	\$ 753,143	\$ 884,541	\$ -	\$ 1,637,685	\$ 1,637,685
2013	13	1,162	\$ 487,002	46	\$ 24,698	508,919	\$ 147,725	\$ 988,253	116,572	\$ 41,357	\$ 115,122	\$ 815,905	\$ 988,253	\$ -	\$ 1,774,158	\$ 1,774,158
2014	14	1,251	\$ 524,464	50	\$ 26,598	548,066	\$ 159,089	\$ 1,031,965	125,539	\$ 44,539	\$ 123,978	\$ 878,667	\$ 1,031,965	\$ -	\$ 1,910,632	\$ 1,910,632
2015	15	1,340	\$ 561,926	54	\$ 28,498	587,214	\$ 170,452	\$ 1,105,677	134,507	\$ 47,720	\$ 132,837	\$ 941,429	\$ 1,105,677	\$ -	\$ 2,047,106	\$ 2,047,106
2016	16	1,430	\$ 599,387	57	\$ 30,398	626,361	\$ 181,815	\$ 1,179,388	143,474	\$ 50,901	\$ 141,689	\$ 1,004,191	\$ 1,179,388	\$ -	\$ 2,183,580	\$ 2,183,580
2017	17	1,519	\$ 636,849	61	\$ 32,298	665,509	\$ 193,179	\$ 1,253,100	152,441	\$ 54,083	\$ 150,544	\$ 1,066,953	\$ 1,253,100	\$ -	\$ 2,320,053	\$ 2,320,053
2018	18	1,608	\$ 674,311	64	\$ 34,198	704,657	\$ 204,542	\$ 1,326,812	161,408	\$ 57,264	\$ 159,400	\$ 1,129,715	\$ 1,326,812	\$ -	\$ 2,456,527	\$ 2,456,527
2019	19	1,698	\$ 711,773	68	\$ 36,098	743,804	\$ 215,906	\$ 1,400,524	170,375	\$ 60,445	\$ 168,256	\$ 1,192,477	\$ 1,400,524	\$ -	\$ 2,593,001	\$ 2,593,001
2020	20	1,787	\$ 749,234	71	\$ 37,998	782,952	\$ 227,269	\$ 1,474,236	179,342	\$ 63,627	\$ 177,111	\$ 1,255,239	\$ 1,474,236	\$ -	\$ 2,729,475	\$ 2,729,475
2021	21	1,876	\$ 786,696	75	\$ 39,897	822,099	\$ 238,633	\$ 1,547,947	188,309	\$ 66,808	\$ 185,967	\$ 1,318,001	\$ 1,547,947	\$ -	\$ 2,865,948	\$ 2,865,948
2022	22	1,966	\$ 824,158	79	\$ 41,797	861,247	\$ 249,996	\$ 1,621,659	197,276	\$ 69,989	\$ 194,822	\$ 1,380,763	\$ 1,621,659	\$ -	\$ 3,002,422	\$ 3,002,422
2023	23	2,055	\$ 861,619	82	\$ 43,697	900,395	\$ 261,360	\$ 1,695,371	206,243	\$ 73,170	\$ 203,678	\$ 1,443,525	\$ 1,695,371	\$ -	\$ 3,138,896	\$ 3,138,896
2024	24	2,144	\$ 899,081	86	\$ 45,597	939,542	\$ 272,723	\$ 1,769,083	215,210	\$ 76,352	\$ 212,533	\$ 1,506,287	\$ 1,769,083	\$ -	\$ 3,275,969	\$ 3,275,969
2025	25	2,234	\$ 936,543	89	\$ 47,497	978,690	\$ 284,087	\$ 1,842,794	224,178	\$ 79,533	\$ 221,389	\$ 1,569,049	\$ 1,842,794	\$ -	\$ 3,411,843	\$ 3,411,843
total		29,038	\$ 12,175,058	1,161	\$ 617,460	12,722,966	\$ 3,693,127	\$ 23,956,328	2,914,308	\$ 1,033,931	\$ 2,878,056	\$ 20,395,737	\$ 23,956,328	\$ -	\$ 44,352,065	\$ 44,352,065

Note: Consumer Tax includes sales tax and hotel occupancy tax

Assumptions:		Source:	
Projection time frame	25 years	City of Houston P&D assumption	
Ad valorem property tax rate	\$ 0.665 per \$100 valuation	City of Houston	
Rate of collection	97%	Harris County Appraisal District	
Homestead exemption rate	20%	Harris County Appraisal District	
HISD Homestead ex amount	\$ 15,000 per unit	Harris County Appraisal District	
SF construction cost	\$ 46,700 per sqft	Conservative estimate based on Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average (\$159.926)	
MF construction cost	\$ 45 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail/Service	\$ 55 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Office	\$ 20 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Industrial	\$ 85%	CB Richard Ellis and O'Connor and Associates	
Retail occupancy rate	\$ 221.52 per 1sqft	O'Connor and Associates (See Below)	
Retail sales generated	1%	City of Houston	
Sales tax rate			

Retail Occupancy for the Eastern Sector was obtained from the 4th quarter overview for the Houston area retail submarkets. Due to the Eastern Sector study overlapping three geographical boundaries identified as the retail submarkets by C B Richard Ellis, I combined the occupancies for the three areas. The average retail occupancy for the Eastern Sector submarket is 85%.

# Harrisburg Micro-Area: Intervention Scenario

Base Year (2000)		2000-2025		
Land-use	Units/BdgS qft	Projected Total New Units/SQFT	% change	Annual % Increase
SF	9,307	units	0.74	2.97%
MF	372	units	0.74	2.97%
Retail/Service	3,011,353	sqft	0.74	2.97%
Office	689,777	sqft	0.74	2.97%
Industrial	5,280,186	sqft	0.74	2.97%

## Base Assumptions:

Annual growth rate was determined by adding 2.97% of the 2000 base each year for the next 25 years.  
 No economic changes in the real estate market throughout the projected period  
 No increase in ad valorem property tax rates, sales tax rates, or hotel occupancy tax rates  
 All single-family units, including condominiums, are homestead properties  
 All institutional structures are tax exempt  
 All commercial square footage generates sales tax  
 All office square footage is taxable

Year	yr	SF		MF		Retail/Service		Office		Industrial		Total Property Tax		Total Consumer		Total Fiscal Revenue	
		cumulative units added from year 1	prop tax rev	cumulative units added 1	prop tax rev	cumulative sqft added	prop tax	cumulative sqft added	prop tax	cumulative sqft added	prop tax	Property Tax	Consumer Tax	Property Tax	Consumer Tax	All Taxes	
2000	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001	1	276	\$ 115,897	11	\$ 5,878	89,437	\$ 25,961	20,486	\$ 7,268	156,822	\$ 20,232	\$ 169,369	\$ 168,403	\$ 169,369	\$ 168,403	\$ 337,772	\$
2002	2	553	\$ 231,794	22	\$ 11,755	178,874	\$ 51,922	40,973	\$ 14,536	313,643	\$ 40,463	\$ 350,471	\$ 336,806	\$ 350,471	\$ 336,806	\$ 687,278	\$
2003	3	829	\$ 347,692	33	\$ 17,633	268,312	\$ 77,883	61,459	\$ 21,804	470,465	\$ 60,695	\$ 525,707	\$ 505,209	\$ 525,707	\$ 505,209	\$ 1,030,916	\$
2004	4	1,106	\$ 463,589	44	\$ 23,511	357,749	\$ 103,845	81,946	\$ 29,072	627,286	\$ 80,926	\$ 700,943	\$ 673,612	\$ 700,943	\$ 673,612	\$ 1,374,555	\$
2005	5	1,382	\$ 579,486	55	\$ 29,389	447,186	\$ 129,806	102,432	\$ 36,341	784,108	\$ 101,158	\$ 876,179	\$ 842,015	\$ 876,179	\$ 842,015	\$ 1,718,194	\$
2006	6	1,659	\$ 695,383	66	\$ 35,266	536,623	\$ 155,767	122,918	\$ 43,609	940,929	\$ 121,389	\$ 1,051,414	\$ 1,010,418	\$ 1,051,414	\$ 1,010,418	\$ 2,061,833	\$
2007	7	1,935	\$ 811,280	77	\$ 41,144	626,060	\$ 181,728	143,405	\$ 50,877	1,097,751	\$ 141,821	\$ 1,226,650	\$ 1,178,821	\$ 1,226,650	\$ 1,178,821	\$ 2,405,472	\$
2008	8	2,211	\$ 927,178	88	\$ 47,002	715,497	\$ 207,689	163,891	\$ 58,145	1,254,572	\$ 161,852	\$ 1,401,886	\$ 1,347,225	\$ 1,401,886	\$ 1,347,225	\$ 2,749,110	\$
2009	9	2,488	\$ 1,043,075	99	\$ 52,922	804,935	\$ 233,650	184,377	\$ 65,413	1,411,394	\$ 182,084	\$ 1,577,122	\$ 1,515,628	\$ 1,577,122	\$ 1,515,628	\$ 3,092,749	\$
2010	10	2,764	\$ 1,158,972	110	\$ 58,777	894,372	\$ 259,612	204,864	\$ 72,681	1,568,215	\$ 202,315	\$ 1,752,357	\$ 1,684,031	\$ 1,752,357	\$ 1,684,031	\$ 3,436,388	\$
2011	11	3,041	\$ 1,274,869	122	\$ 64,655	983,809	\$ 285,573	225,350	\$ 79,949	1,725,037	\$ 222,547	\$ 1,927,593	\$ 1,852,434	\$ 1,927,593	\$ 1,852,434	\$ 3,780,027	\$
2012	12	3,317	\$ 1,390,766	133	\$ 70,533	1,073,246	\$ 311,534	245,837	\$ 87,217	1,881,858	\$ 242,779	\$ 2,102,829	\$ 2,020,837	\$ 2,102,829	\$ 2,020,837	\$ 4,123,666	\$
2013	13	3,593	\$ 1,506,663	144	\$ 76,411	1,162,683	\$ 337,495	286,323	\$ 94,465	2,038,660	\$ 263,010	\$ 2,278,065	\$ 2,189,240	\$ 2,278,065	\$ 2,189,240	\$ 4,467,304	\$
2014	14	3,870	\$ 1,622,561	155	\$ 82,288	1,252,121	\$ 363,456	307,296	\$ 101,753	2,195,501	\$ 283,242	\$ 2,453,300	\$ 2,357,643	\$ 2,453,300	\$ 2,357,643	\$ 4,810,943	\$
2015	15	4,146	\$ 1,738,458	166	\$ 88,166	1,341,558	\$ 389,417	327,782	\$ 116,290	2,352,323	\$ 303,473	\$ 2,628,536	\$ 2,526,046	\$ 2,628,536	\$ 2,526,046	\$ 5,154,582	\$
2016	16	4,423	\$ 1,854,355	177	\$ 94,044	1,430,995	\$ 415,378	348,268	\$ 123,558	2,509,144	\$ 323,705	\$ 2,803,772	\$ 2,694,449	\$ 2,803,772	\$ 2,694,449	\$ 5,498,221	\$
2017	17	4,699	\$ 1,970,252	188	\$ 99,922	1,520,432	\$ 441,340	368,755	\$ 130,826	2,665,966	\$ 343,936	\$ 2,979,008	\$ 2,862,852	\$ 2,979,008	\$ 2,862,852	\$ 5,841,860	\$
2018	18	4,976	\$ 2,086,149	199	\$ 105,799	1,609,869	\$ 467,301	388,241	\$ 138,094	2,822,787	\$ 364,168	\$ 3,154,243	\$ 3,031,255	\$ 3,154,243	\$ 3,031,255	\$ 6,185,488	\$
2019	19	5,252	\$ 2,202,047	210	\$ 111,677	1,699,306	\$ 493,262	389,241	\$ 145,362	2,979,609	\$ 384,399	\$ 3,329,479	\$ 3,199,658	\$ 3,329,479	\$ 3,199,658	\$ 6,529,137	\$
2020	20	5,528	\$ 2,317,944	221	\$ 117,555	1,788,744	\$ 519,223	409,728	\$ 152,630	3,136,430	\$ 404,631	\$ 3,504,715	\$ 3,368,061	\$ 3,504,715	\$ 3,368,061	\$ 6,872,776	\$
2021	21	5,805	\$ 2,433,841	232	\$ 123,433	1,878,181	\$ 545,184	430,214	\$ 159,898	3,293,252	\$ 424,862	\$ 3,679,951	\$ 3,536,464	\$ 3,679,951	\$ 3,536,464	\$ 7,216,415	\$
2022	22	6,081	\$ 2,549,738	243	\$ 129,310	1,967,618	\$ 571,145	450,700	\$ 167,166	3,450,074	\$ 445,094	\$ 3,855,186	\$ 3,704,867	\$ 3,855,186	\$ 3,704,867	\$ 7,560,054	\$
2023	23	6,358	\$ 2,665,635	254	\$ 135,188	2,057,055	\$ 597,107	471,187	\$ 174,435	3,606,895	\$ 465,326	\$ 4,030,422	\$ 3,873,270	\$ 4,030,422	\$ 3,873,270	\$ 7,903,693	\$
2024	24	6,634	\$ 2,781,533	265	\$ 141,066	2,146,492	\$ 623,068	491,673	\$ 181,703	3,763,717	\$ 485,557	\$ 4,205,658	\$ 4,041,674	\$ 4,205,658	\$ 4,041,674	\$ 8,247,331	\$
2025	25	6,910	\$ 2,897,430	276	\$ 146,944	2,235,930	\$ 649,029	512,159	\$ 187,703	3,920,538	\$ 505,789	\$ 4,380,894	\$ 4,210,077	\$ 4,380,894	\$ 4,210,077	\$ 8,590,970	\$
total		89,836	\$ 37,666,586	3,591	\$ 1,910,268	29,067,085	\$ 8,437,375	6,658,072	\$ 2,362,134	50,966,995	\$ 6,575,252	\$ 56,945,750	\$ 54,730,995	\$ 56,945,750	\$ 54,730,995	\$ 111,676,745	\$

Note: Consumer Tax includes sales tax and hotel occupancy tax

Assumptions:		Source:	
Projection time frame	25 years	City of Houston P&D assumption	
Ad valorem property tax rate	\$ 0.665 per \$100 valuation	City of Houston	
Rate of collection	97%	Harris County Appraisal District	
Homestead exemption rate	20%	Harris County Appraisal District	
HISD Homestead ex amount	\$ 15,000	Harris County Appraisal District	
SF construction cost	\$ 100,000 per unit	Conservative estimate based on Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average (\$159,926)	
MF construction cost	\$ 46,700 per unit	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail/Service	\$ 45 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Office	\$ 55 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Industrial	\$ 20 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average	
Retail occupancy rate	85%	CB Richard Ellis and O'Connor and Associates	
Retail sales generated	\$ 221.52 per 1sqft	O'Connor and Associates (See Below)	
Sales tax rate	1%	City of Houston	

Retail Occupancy for the Eastern Sector was obtained from the 4th quarter overview for the Houston area retail submarkets. Due to the Eastern Sector study overlapping three geographical boundaries identified as the retail submarkets by C B Richard Ellis, I combined the occupancies for the three areas. The average retail occupancy for the Eastern Sector submarket is 85%.

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# **APPENDIX E: INFRASTRUCTURE COSTS**

Share Analysis					
	Population: 2000	Population 2025: No Intervention	Population 2025: Intervention	Employment 2025: No Intervention	Employment 2025: Intervention
Regional (HGAC Region)	4,050,000	7,330,500	7,330,500	2,932,701	4,992,923
City of Houston Total	1,953,631	2,837,649	2,837,649	1,757,071	2,517,004
Sector 3 Total	276,000	361,560	389,850	132,940	229,322
Microarea Harrisburg	58,455	72,484	101,858	20,510	27,176
Microarea Wayside	16,268	19,888	29,120	7,125	11,311
<b>Microarea(H+W) Tot</b>	<b>74,723</b>	<b>92,372</b>	<b>130,978</b>	<b>27,635</b>	<b>38,487</b>

**Total Population and Employment Share of City of Houston for Eastern Houston Micro-Areas (with current trends and with government intervention)**

East Sector					
Scenarios	Population Share in Metro Area 2000	Employment Share in Metro Area 2000	Population Share in Metro Area 2025	Employment Share in Metro Area 2025	
With current trends	3.82%	1.57%	3.26%	1.53%	
With Gov. Intervention			4.62%	1.88%	
<b>Harrisburg</b>					
	Harrisburg Population Share (City) 2000	Harrisburg Employment Share (City) 2000	Population Share in Harrisburg 2025	Employment Share in Harrisburg 2025	
With current trends	2.99%	1.17%	1.42%	1.08%	
With Gov. Intervention			3.59%	1.42%	
<b>Wayside</b>					
	Wayside Population Share (City) 2000	Wayside Employment Share (City) 2000	Population Share in Wayside 2025	Employment Share in Wayside 2025	
With current trends	0.83%	0.41%	0.70%	0.45%	
With Gov. Intervention			1.03%	0.46%	

Source: U.S. Census Bureau, 2000;  
Houston-Galveston Area Council (H-GAC)



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**APPENDIX F:**

**MICRO-AREA POPULATION  
AND EMPLOYMENT  
SHARES IN THE HOUSTON  
METROPOLITAN AREA**

### Calculating Growth Rate for the purpose of Regional Share

microareas	moderate_YRLY	scenario 2_YRLY	Wayside	moderate_YRLY	scenario 2_YRLY
Average Pop	0.93	3.07	population	0.89	3.16
Average Emp	1.83	2.74	employment	2.35	2.50
<b>City of Houston</b>			<b>Harrisburg</b>		
population	1.81	2.27	population	0.96	2.97
employment	1.73	2.25	employment	1.30	2.97
<b>Sector 3 Average</b>	<b>moderate_YRLY</b>	<b>aggressive_YRLY</b>	<b>Regional(H+FB+M)</b>		
population	1.24	1.65	Average Population	3.24	3.82
employment	2.90	3.72	Average Employment	2.81	3.35

#### 1. For Eastern Sector

Household Growth Rates have been substituted for population Growth Rates

Average Household Size for COH =2.67

#### **Sector 3 Average**      **moderate\_YRLY**   **aggr\_yrly(hgac numbers)**

population	1.24	1.65
employment	2.90	3.72

#### 2. For Region: Harris, Fort Bend and Montgomery Counties

#### **Harris**      **Moderate(YRLY)**   **Aggressive(YRLY)**

population	1.78	2.33
employment	1.60	2.12

#### **Fort Bend**

population	3.83	4.45
employment	3.52	4.09

#### **Montgomery**

population	4.10	4.68
employment	3.32	3.83

Average Population	3.24	3.82
Average Employment	2.81	3.35

#### 2. For City of Houston

#### **population**      **Moderate(YRLY)**   **Aggressive(Yrly)**

population	1.81	2.27
employment	1.73	2.25

#### **Aggressive**

A_HHS_2000	A_HHS_2025	A_HH_CHG_Yr	A_yrly
1192320	1869720	677400	

A_JOBS_200	A_JOBS_202	A_JOB_CHG	
1771552	2768059	996507	

#### **Moderate**

HHS_2000	HHS_2025	HH_CHANGE_Yr	
1192320	1730787	538467	

JOBS_2000	JOBS_2025	JOB_CHANGE	
1771552	2537860	766308	

#### **Wayside**      **Moderate(YRLY)**   **Aggressive(YRLY)**

population	0.89	3.16
employment	2.35	2.50

#### **Harrisburg**

population	0.96	2.97
employment	1.30	2.97

<b>Average Pop</b>	<b>0.93</b>	<b>3.07</b>
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<b>Average Emp</b>	<b>1.83</b>	<b>2.74</b>
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# **APPENDIX G: MICRO-AREA GROWTH SCENARIOS**

Wayside Growth Scenarios							
Land Use	Scenario 1: Sq Feet of Bldg Added in 1 Year	Scenario 1: Total Units Added in 1 Year	25 Year Growth: Scenario 1 Sq Ft	25 Year Scenario 1: Total Units	Scenario 2: Sq Feet of Bldg Added in 1 Year	Scenario 2: Total Units Added in 1 Year	25 Year Growth: Scenario 2 Sq Ft Scenario 2: Total Units
Others (mismatched)	-	-	-	-	-	-	-
Single Family	50,015	39	1,250,387	966	177,583	137	4,439,575
Multi Family	2,486	2	62,157	48	8,828	7	220,694
Commercial	10,641	-	266,028	-	14,309	-	357,723
Office	347	-	-	-	467	-	-
Industrial	95,963	-	-	-	129,040	-	-
Public and Institutional	7,424	-	-	-	9,983	-	-
Transportation and Utilities	1,530	-	-	-	2,057	-	51,436
Parks and Open Space	-	-	-	-	-	-	-
Undeveloped	-	-	-	-	-	-	-
Agricultural	-	-	-	-	-	-	-
Open Water	-	-	-	-	-	-	-
<b>Total</b>	<b>168,407</b>		<b>1,578,572</b>		<b>342,267</b>		<b>5,069,428</b>

Population and Units	
Scenario 1	
Avg Single Family Bldg Size	1,295
Typical Multi Family Unit Size	750
Years	25

Population and Units	
Scenario 2	
Avg Single Family Bldg Size	1,295
Typical Multi Family Unit Size	750
Years	25

Source: Calculated based on HCAD values

Harrisburg Growth Scenarios								
	Scenario 1: Sq Feet of Bldg Added in 1 Year	Scenario 1: Total Units Added in 1 Year	25 Year Growth: Scenario 1 Sq Ft	25 Year Scenario 1: Total Units Added	Scenario 2 : Sq Feet of Bldg Added in 1 Year	Scenario 2: Total Units Added in 1 Year	25 Year Growth: Scenario 2 Sq Ft	25 Year Scenario 2: Total Units Added
Land Use								
Others (mismatched)	-	-	-	-	-	-	-	-
Single Family	115,285	89	2,882,120	2,226	357,993	276	8,949,819	6,911
Multi Family	69,780	93	1,744,502	2,326	216,687	289	5,417,184	7,223
Commercial	39,128	-	978,195	-	89,437	-	2,235,930	-
Office	8,963	-	224,064	-	20,486	-	512,159	-
Industrial	68,608	-	1,715,193	-	156,822	-	3,920,538	-
Public and Institutional	9,920	-	248,007	-	22,676	-	566,888	-
Transportation and Utilities	696	-	17,399	-	1,591	-	39,769	-
Parks and Open Space	-	-	-	-	-	-	-	-
Undeveloped	-	-	-	-	-	-	-	-
Agricultural	-	-	-	-	-	-	-	-
Open Water	-	-	-	-	-	-	-	-
Total	312,379		7,809,480	4,552	865,691		21,642,287	14,134

Population and Units	
Scenario 1	
Avg Single Family Bldg Size	1,295
Typical Multi Family Unit Size	750
Years	25

Population and Units	
Scenario 2	
Avg Single Family Bldg Size	1,295
Typical Multi Family Unit Size	750
Years	25

Source: Calculated based on HCAD values



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# INFORMATION SOURCES

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## Information Sources

### Demographic

City of Houston, *2000 Land Use and Demographic Profile (LUDEM)*  
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### Transportation

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City of Houston Department of Public Works and Engineering  
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### Community

City of Houston, Planning and Development Department, Planning Services Community Database  
City of Houston, Planning and Development Department, COHGIS  
City of Houston, Parks and Recreation Department  
City of Houston Housing Authority

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